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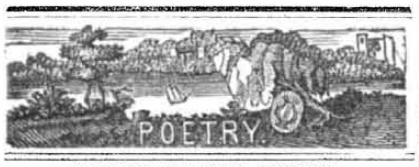
☞ *See Advertisement on last page.*



PATENT MACHINE POETRY.

THE EXPERIMENT.

BY. R. PORTER.

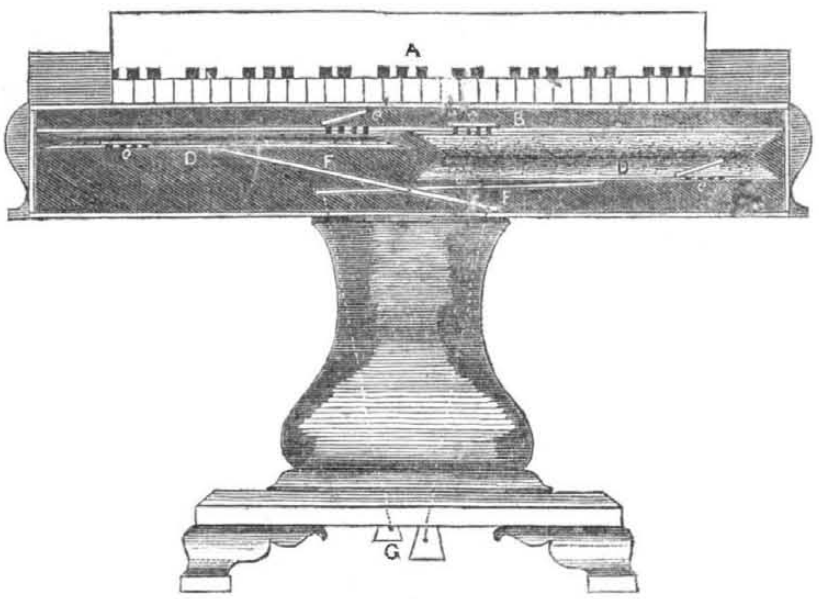
The following quaint-measure poetic narrative is supposed to have been the production of the *debut*, or experimental operation of a new patent poetic machine. The inventor says: "It will grind out poetry *spontaneously* in all the varieties of measure fancifully interspersed in the same stanza; and will sometimes produce a double rhyme in a single word: that the only imperfection of the machine at present, is some slight deficiency in the arrangement for stopping it quick enough to regulate the size of its poems to the capacity of newspaper columns. But he is confident of being able to surmount this difficulty, and furnish poetry in quantities to suit customers.

There was a man,
(And who'll presume to doubt it?)
Who laid a plan,
To make his fortune and get rich, [which
Or break his neck—he did not then know
But set himself about it.
His plan was to invent a new machine
For catching Snipe!
For plenty there were seen
About the shore [laid,
Of a small rock-bound lake. His plans were
While sitting in the rural shade,
Or leisurely reclining on the green
Near by his cottage door
Smoking his pipe.
Two small straight sapling trees he found
Firm rooted on this rocky shore,
Where Snipe were wont to fly:
(These saplings were some 35 feet high,)
These he contriv'd to bend, and wrought all day
With windlas, ropes and levers; and at last,
He brought the tops of two trees to the ground
And made them fast:
But yet in such a way,
That he at any time could let them fly,
And straighten up to where they were before.
Across the tops of these two trees,
While in their bent position,
He fasten'd a short plank, in safe condition,
With strips of leather;
For they were paralliel, and close together.
On this he plac'd himself, with full intent,
To catch the snipe, be't young or old,
That first should be so bold,
As o'er the place to fly;
And on his knees
Sat watching. He had not long to wait before
A Snipe came hovering o'er:
He quick lets go his fastening, and flies
Toward the skies,
And by the neck he seized the snipe
And held it by a firm determin'd gripe;
And thus the bird was fairly caught,
Being taken by surprise.
Just then a sudden thought,
While by inertia, in mid air suspended,
And nearly 90 feet above the ground,
(The impulse given by the saplings bent,
Being expended,
Or merely balancing the counter-action
Of earth's attraction,)
Now darted on his mind,
What should—what *could* he do?
How was he now to regulate
The speed of his descent?
A thing which in the ardor of invention,
As he was now surprised to find
He'd given no attention—
And now he had no leisure to invent.
Now impulse and inertia had combin'd
To constitute momentum, and rebell'd
Against the laws of gravity,
Who being incens'd by such gross depravity,
Their plans had steadily oppos'd:
And now that he had got the upper hand,
"If the projector don't return to land
With as much speed as he went up or more
It will not be for want of due exertion
Of gravity." And now poor Ykit—
(Ykit?) Ykit, that's his name;
Have not I told you this before?
Well then I tell you now, his name was Ykit.
Well, now, from his high station,
Or rather transient elevation,
With utter consternation
He look'd below,—
He did not like it,—
He *must* descend whether he would or no.
And now in fact, already found
Himself in progress tow'rd the ground
Not very slow.
Should he spread out the wings
Of his new prize?
But these he found
Were feeble tiny things,
And much too small
To check his fall.
Oh, had he but a parachute or parasol.
His intellect expanding,
Flew round in circles with intent
To hit on some expedient:—
Had he but *time* he might invent—
But no, no, no!
Head downward now descending
Directly on the ragged rocks below.
O! O——o——o——o!!!!

[A rush was now made by our engineer and some of the compositors to stop the engine, and the steam was shut off: but the fly-wheel aided and abetted by momentum, revolted,—declared independence, and for some time persisted in carrying on business on its *own hook*; and producing as you shall see.]

Just then one foot,
Encased in a stout cowhide boot,
Caught in the fork
Of a tall solitary limb,
(A lucky circumstance for him,)
Of an old withered tree;
Hold on—hold on good branch, cried he,
And was obey'd,
Yet not with sudden jerk,
The branch was gently bent
But *did not break*,
And Ykit then was stay'd.
Now all this time, with steady gripe,
Ykit had firmly held the snipe.
How happy now was he
Thus hanging by one foot suspended
From an old oak tree,
His troubles for the present all were ended.
For though it was an easy thing,
As he was well aware,
To slide down gently to the ground,
Yet so *contented* was he now in this position,
He felt no wish to better his condition,
But chose to hang awhile and swing,
High dandling in the air,
Unwilling, as it seemed, to leave the place,
Where he for the *first* time had found
Perfect contentment. But at length preferr'd
To dwell on land;
So gently sliding down
He safely reach'd the ground,
Still holding fast his bird
In his right hand.
For who can guess
How highly a mechanical Inventor
Or philosophical experimentor,
Will cherish *evidence* of his success.
Then Ykit to his cottage did repair,
And smok'd his pipe,
And with a self complacent and triumphant air
He often would relate the whole affair
How he had caught the Snipe.

THE ÆOLION.



This is a new and elegant musical instrument for the parlor, and calculated to supersede to a great extent, the piano forte, to which in fact, the new instrument is entitled to a preference: the principal exception consisting in its being less expensive. It is furnished with a key-board, A, like the piano, and the music is produced by means of reeds similar to those of the accordion, but more delicate. Below the key-board is a small wind-chest B, which communicates with the reeds, and is supplied with wind from the two bellowses D D, by the valves *e e*: and the bellows are operated by the two cross levers F F, the opposite ends of which are connected by wires directly to the pedals G. (It will be seen that in the engraving the instrument is represented to be open in front, for the purpose of showing the interior machinery, which is ordinarily concealed from view.) By this arrangement the pressure of air is commanded and regulated by the feet of the performer · and such is the construction of the reeds that they are susceptible of all the variations from the full sound of the clarionett to the softest tones of the flute or æolian harp: and the loudest and softest notes may be played in rapid alternation. This instrument is the invention of Messrs. Blodgett & Horton, of Akron, Ohio, who have put measures in progress for securing a patent therefor. We should recommend to the inventors to send a specimen to this city as early as possible, and we cannot doubt that they would immediately meet with plenty of orders for the instruments.

LIST OF PATENTS

Issued from the United States Patent Office, from the 10th of February, 1847, to the 6th of March, 1847, inclusive.

To T. Molineau, of Louisiana, for improvements in Barrel Machinery. Patented Feb. 10, 1847.

To John Lewis, of New Haven, Conn., for improvement in Pneumatic Springs. Patented Feb. 10, 1847.

To Thomas Grenell, of Newark, N. J. for improvement in fastening Rails on Railroads. Patented Feb. 13, 1847.

To Cyrus Knapp, of Cincinnati, Ohio, for improvements in Spinal Elevators. Patented Feb. 13, 1847.

To Damon A. Church and Lovett H. Obert, of Friendship, N. Y., Weston W. Willoughby and O. F. Willoughby, of Chicago, Illinois, for improvement in Threshing Machines.—Patented Feb. 13, 1847.

To Joseph W. Harman, of Newark, N. J., for improvement in Bleaching Rosin, (having assigned his right, title and interest to Humphrey B. Dunham.) Patented Feb. 20, 1847.

To William W. Van Loan, of Catskill, N. Y., for improvement in Fire Esca e. Patented Feb. 20, 1847.

To William H. Worthington, of New York, and William H. Baker, of Williamsburg, N. Y., for improvement in apparatus for guaging the height of water in Boilers. Patented Feb. 20, 1847.

To Asa Fisk, jr., Leander D. Rumsay, and Orson S. Gregory, of Sullivan, Pa., for improvement in machinery for Dressing Mill Stones. Patented Feb. 20, 1847. Ante dated 10th of Oct., 1846.

To James H. Conklin, of Peekskill, N. Y., for improvement in Cooking Stoves. Patented Feb. 20, 1847.

To Thomas Watt, of Hubbard Township, Ohio, for improvement in Tailors' Measures. Patented Feb 20, 1847.

To George Bartlett, of Smithfield, R. I., for improvement in Ploughs. Patented Feb. 5, 1847.

To Andrew Ralston, West Middletown, Pa. for improvement in operating Railroad Switches. Patented Feb. 20, 1847.

To Lewis G. Hoffman, Albany, New York, for for improvement in Artificial Incubation. Patented Feb. 20, 1847.

To Elijah O. Penniman, of Rochester, New York, for designs for Cooking Stoves, (having assigned his right, title and interest to Messrs. Cheney, Hunter & Rowe.

To Thomas H. Russell, of Wednesburg, England, for improvement in welding iron tubes. Pated 6th March, 1847. Date of English patent, Aug. 14, 1845.

To Elbridge G. Woodman, of North Chelmsford, Mass., for improvemement in machinery for measuring and folding cloth. Patented March 6, 1847.

To Arnold R. Austin of Providence, R. I., for improvement in machinery for measuring and folding cloth, (having assigned his right to Simeon D. Glines.) Patented March 6, 1847.

To Emanuel Albert, of East Germantown, Indiana, for improvement in Ploughs. Patented March 6, 1847.

To John T. Davy, of Troy, N. Y., for improvement in Coal Stoves. Patented March 6, 1847.

To John Cumberland, of Mobile, Ala., for improvement in machines for reducing and planing boards. Patented March 6, 1847.

To John Maxon, of DeRuyter, N. Y., for improvement in hanging carriage bodies. Patented March 6, 1847.

To Robert M. Livingston, of Mobile, Ala., for improvement in machinery for cleaning cotton. Patented March 6, 1847.

To Stephen J. Gold, of Norwalk, Con., for improvement in propellers for vessels. Patented March 6, 1847.

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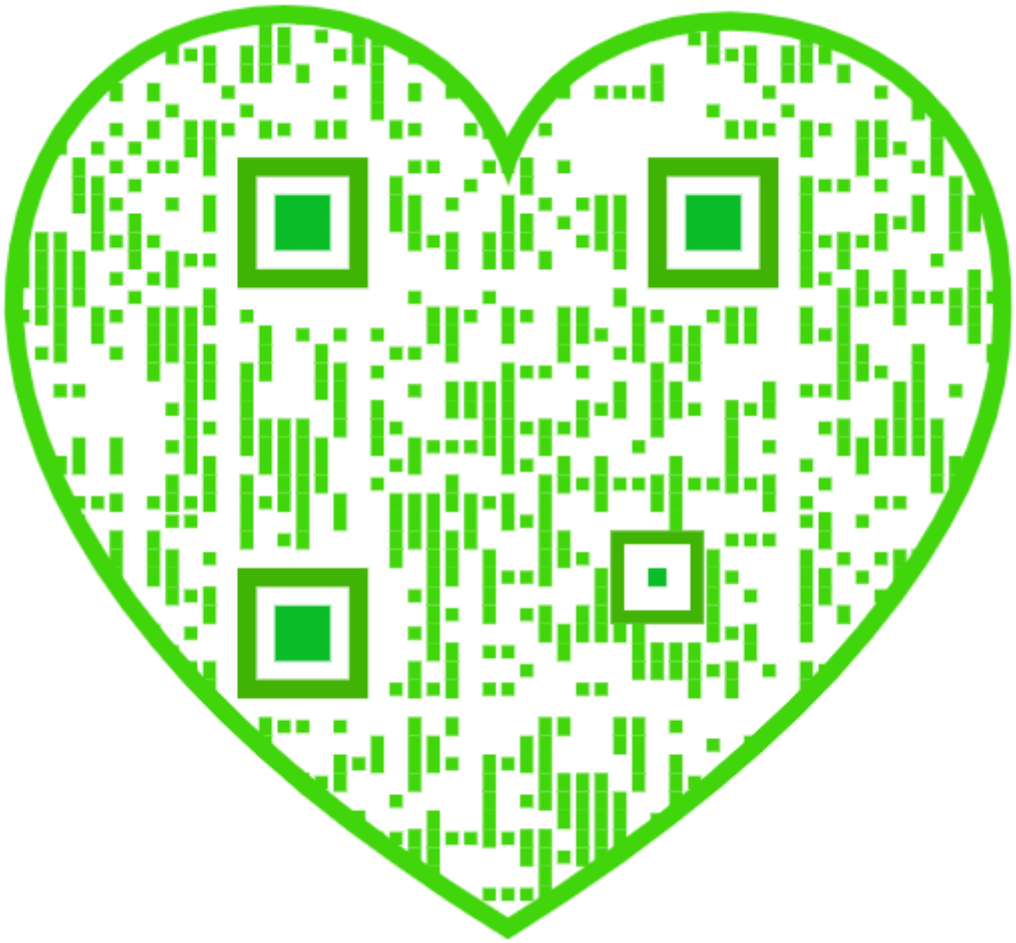

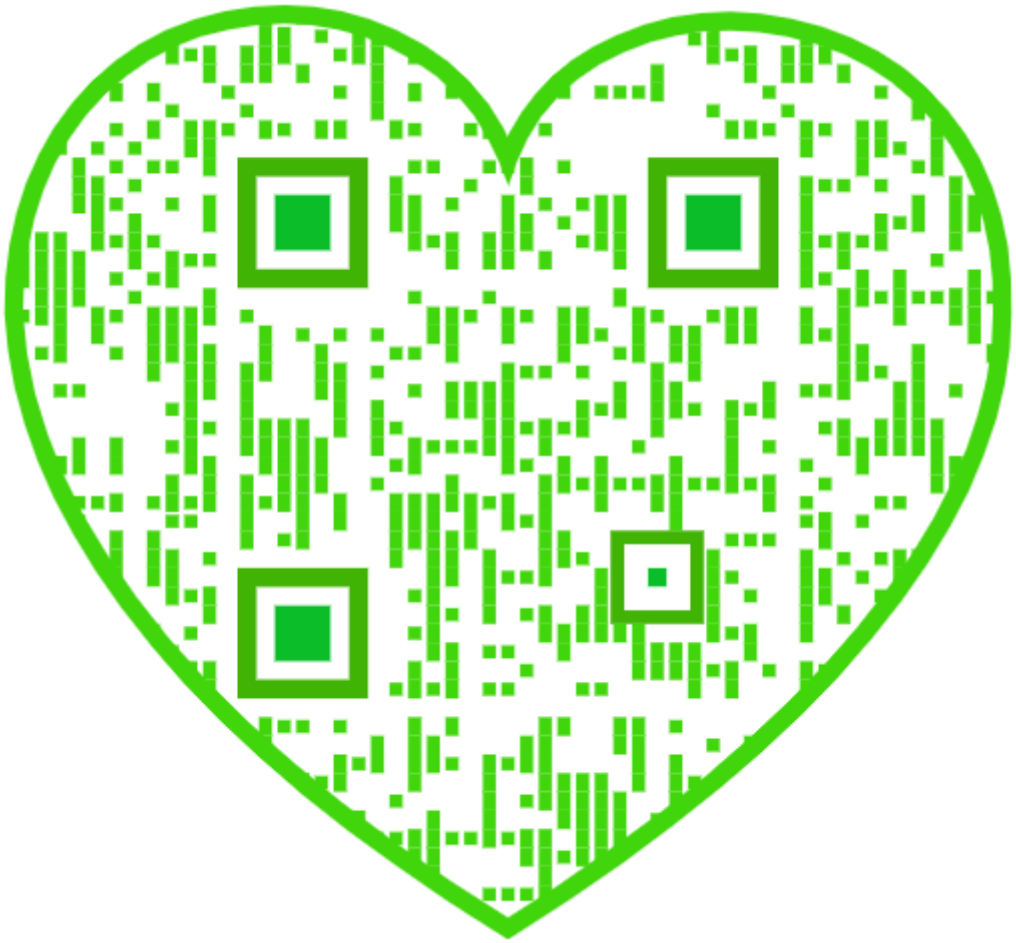

Atlantic and St. Lawrence Railroad.

The Portland Bulletin has the following intelligence concerning the progress of this work :—" Continued trains of teams heavily laden with piles and timber for abutments to protect the railroad from the influence of the sea, and for bridging, have been pouring into the city for a fortnight past. A bridge for a double track, below low water mark, is to be built from Fish Point (Mount Joy,) to India wharf, foot of India street. A contract has been made with Messrs. Seward, Merrill and George Turner, for the completion of this bridge, and the building will commence immediately. The company have purchased India and steamboat wharves, with a view, we believe, of ultimately building an immense depot in that section The bridge to the eastward of, and running nearly parallel with Tukey's Bridge, over Back Cove, is, we understand, to be built by the company.

" The second section of this road, extending from North Yarmouth to the old tavern road near Lewiston, a distance of 17 miles, is rapidly levelling before the efforts of a very large gang of hands. The dykes and culverts are nearly finished, and large sections of the grades are ready for the layer of gravel. Preparations are in progress for building the bridges over the Presumpscot and Royal Rivers, and it is not improbable that by next Fall the cars will be running on the whole route between this city and Lewiston."

Essence of Coffee.

Among all the new inventions and discoveries that are astonishing the world, and the universal Yankee nation in particular, we have heard of none which promises to be more useful and acceptable, at least to ladies than "The Essence of Coffee," which is now offered to the lovers of that beverage. It is the genuine stuff, and you have only to put a tea-spoon full into a cup of water containing the usual complement of sugar and milk, and you have a cup of superior coffee without further trouble.—The article is put up in bottles, at a low price.

Luminous Idea.

A city paper, sustained nearly altogether by rum shops, in an article on the Excise Law says :—" The right to raise grapes includes the right to make wine—the right to sell—the right to buy and to drink." Bright philosphy, that! The right to raise food for sustenance implies the right to convert that food into a poison by a chemical process and destroy one's self or one's neighbor! Wonder if the right to raise cotton for clothing implies the right to make gun-cotton and blow out the brains of your fellow beings ?

Excusable.

Whilst a regiment of volunteers were marching through Camargo, a captain (a strict disciplinarian,) observing that one of the drums did not beat, ordered a lieutenant to inquire the reason. The fellow, on being interrogated, whispered to the lieutenant, "I have a turkey in my drum, for the captain." This being whispered to the captain, he exclaimed aloud, " Why did'nt the drummer *say* he was *lame ?* I do not want men to do their duty when they are not able."

The Knave and the Fool.

A farmer from Washington County came down to Albany with wool and poultry in his sleigh. He gave a man a ride who treated him liberally, saw the sleigh and load safely deposited in a tavern, then took him to an assignation house, where he left him, and went off with the sleigh, horses and load, worth $250. The *fool* has got his deserts, and the *knave* will receive his when caught.

Discovery in Natural History.

There was lately discovered in opening a quarry at the Island of Grand Canary, the skeleton of a large Dog, in a good state of preservation. It was purchased by the Consular Agent of France, and sent to the Museum of Natural History at Paris.

A Literary Curiosity.

We have in present possession, (by loan for a brief period,) a copy of a bible printed in 1601. This book is the property of a gentleman of this city, and although it has the peculiarities of the English language of that age, we find the translation in several instances, more correct, or in accordance with the original sense, than the common translation. Of this we give a single example at present, from the 12th chapter of Daniel.

Ancient.	*Modern.*
6. And *one* sayde vnto the man clothed in linen, which was vpon the waters of the riuer, When *shal be* the end of these wonders ?	6. And *one* said to the man clothed in linen, which *was* upon the waters of the river, How long *shall it be* to the end of these wonders ?
7. And I heard the man clothed in linen which was vpon the waters of the riuer, whe he held vp his right hand, and his left hand vnto heauen, & sware by him that liueth for euer that *it shall tarie* for time, two times & an halfe: and whe he shal haue accomplished to scatter the power of the holy people, al these things shal be finished.	7. And I heard the man clothed in linen, which *was* upon the waters of the river, when he held up his right hand and his left hand unto heaven, and sware *by* him that liveth for ever, that *it shall be* for a time, times, and an half; and when he shall have accomplished to scatter the power of the holy people, all these *things* shall be finished.

We cannot doubt that an exact fac simile reprint of this ancient edition would command an extensive sale. We may again refer to the subject,

India Rubber Ink-rollers.

The Green Mountain Freeman, (an excellent paper, by the way) states that India rubber has been successfully used for rollers, but were too expensive on account of the *naptha* in which the rubber had to be dissolved. We think he might have added that in a little time the rollers become soft and sticky at the surface. However, the rollers now used by our printers, are made of pure solid sulphuretted rubber without dissolving it, and is thus both cheap and durable.

Great meeting of the Smiths.

All persons bearing the name of SMITH, are requested to meet on Boston Common, on the afternoon of the 4th March, at 4 o'clock, for the purpose of forming an association to ascertain if there is not some large amount of property about to be left to them, by some of the family expected shortly to die in England.

By order. JOHN SMITH, Sec'y.

—*Boston Post.*

All the New York family of Smiths are ready to respond except John; he wants a promise of the office of Treasurer, as a condition of attendance.

A Hard Journey.

Mr. J. W. Washburne, editor of the " Arkansas Intelligencer" says the St., Louis Reveille, arrived in town just in time to enjoy the spectacle of the day. Van Buren, at which town he publishes his paper, is about six hundred miles above the mouth of the Arkansas. It is situated on the Indian line, and he reached St. Louis by travelling along the frontier, and so across to Jefferson, thence to the city. He is on his way to Washington.

Weather in Matamoras.

It appears by the Matamoras Flag that however mild and pleasant, winters in that quarter have heretofore been, the past winter has been rather turbulent, and even on the extreme. If calm, it is a perfect calm—if it blow, it is a perfect hurricane—if hot, it is melting, if cold, it is freezing, and the changes from one to the other are so rapid that they have all varieties of climate in twenty four hours. The Mexicans say that everything is changed since the coming of the Americans.

The Railroad Journal.

We have said enough in praise of that paper heretofore; and would now simply remind the editor thereof, that we should never complain of any *neglect* of credit: but to see our articles repeatedly credited to the " New York Farmer," apparently intentional, is immensely provoking.

Hoboken.

The peaceably disposed inhabitants of Hoboken have resolved on effective measures for the suppression of drinking and gambling in that beautiful retreat.

Mechanics' Papers.

We are happy to observe that both of our Albany cotemporaries,—' Mechanic's Journal,' and ' Mechanic's Advocate,' are going ahead in good style, and it is difficult to judge from appearances which will become most popular: one of them being very cheap, and the other a little the best. Between them both, we hope they will wake up some of the sleepy mechanics of that section, to the importance of learning something besides the established shop rules. We find some excellent originals in both papers.

P. S. Since writing the above we have received a copy of the " Mechanic's Advocate" of Feb 25th, which had probably been withheld from us by the publisher, on account of a scandalous article in its columns. The publisher had nothing to fear, however, on that score, as but few of his eight hundred subscribers who *can* read, would take the trouble to read the article in question. He will please accept our thanks for his promptness in crediting *one* of a column of *seven* of our new invention articles. Go ahead.

The Inventor's Institute.

This combination of patriotism and enterprise, meets with decided and extensive favor; and we think it not extravagant to anticipate at least 500 members in this city alone. The first edition of circulars, calculated to illustrate the propriety of an institute of this kind, has been well received ; and another edition with a plan of a constitution, will be issued in a few days, and a meeting of inventors and mechanics in general will be called to consider the subject in its various bearings, and express or manifest their views thereon. We can see no reason why the business of this institution should not produce dividends of fifty per cent on the capital invested, to say nothing of its incalculable advantage to the public.

The Wonderful Professor.

Few people have visited New York within the last 15 years without hearing or reading something about Professor Goward ; indeed so great have been his professions of skill (for he is a great *professor*) that his announcements have often been looked upon as sheer humbug rather than reality. But he still flourishes, as appears by the following advertisement, which we clip from one of the dailies.

DOLLAR CLASSES !—Professor Goward, A. M., of Amherst College : 31 years Teacher, (18 in N. Y. city) teaches 52 Languages, Arts and Sciences, each in six lessons, for $1, each branch ! and to a whole family ! Dancing, Writing, Music, &c. Classes every week—private lessons daily, at 65 Chatham st

Enterprise of New Grenada.

The Government of New Grenada, have contributed $150,000 towards getting up a line of steamers from Santa Martha, Carthagena and Cuba, and there to have a boat to take the mail to the United States.

Tremendous Collision.

The steamers California and Isaac Newton came in collision two weeks since on the Ohio River, and the concussion was so violent that the California sunk in less than one minute.—Seven persons are supposed to have been drowned.

Caution to Iron Founders.

Mr. George Bigsby, of the High street Furnace, Providence, lately had his face dreadfully injured, and sight destroyed when " pouring," by the dashing up of the liquid iron, caused by water in the mould.

Too Late.

A servant girl in Brooklyn sent all her earnings ($30) to relieve her distressed relations in Ireland ; and soon after received news of the death of her father, mother, brothers and sisters, eight in number.

The Curse of Distilleries.

Father Mathews calculates that the grain destroyed by the breweries and distilleries of Ireland, would if used for food, be sufficient to support the population.

The editor of the Cincinnati Atlas has been presented with a quill of the Condor of the Andes, which is two feet three inches in length, the barrel six inches long, and nearly as large as the forefinger.

European Items.

A Society has been established, having Lord Ashley at its head, for the purpose of providing free reading rooms for the laboring classes in the city of London.

Dr. Baudelocque has communicated to the French Academy of Sciences, that by a new surgical treatment he had restored audition, and the elements of speech to a deaf and dumb boy, nine years old.

The special reporter of the Cork Examiner, mentions the complete discontinuance of marriages in that county.

It is stated that Mr. Stephenson, has invented a three cylinder engine, whose power is so great that it starts off like an arrow from a bow.

The subscription of the Society of Friends in England, for the relief of the suffering Irish, averages more than £5 from each family, rich and poor.

Dr. Ryan, professor of chemistry, says that if Westminster Bridge, which is built of magnesia lime stone, were covered with water and sulphuric acid, it would be converted into Epsom salts.

The " Iris," a paper printed in Sheffield, England, states that neither sun, moon, nor stars, shone upon that town for the first thirteen days of the present year.

The number of marriages in England, is about 98,000 per annum. The number of births of the male sex to that of females as 96 to 95. Pretty well balanced.

Sophalae in Eastern Africa, has been ascertained to be the Ophir of the scriptures,—the place where King Solomon obtained his gold.

Eggs were selling at Liverpool, England, at the latest dates, at 60 cents per dozen, and potatoes 2 1-2 cents per pound.

Twenty-one.

Whether a man is 21 years of age, on his 22d birthday or the day previous, may seem to be a very simple question, but it has agitated some great minds. Chancellor Kent, and the late Chief Justice Swift have decided that a man becomes of age on the day previous to the anniversary of his birthday ; so that a person born on the 28th of February, attains his majority on the 27th.

From the Green Bay Advocate we learn that a man was tarred and feathered and rode on a rail, for marrying, four days after the death of his wife, a widow whose husband had been dead but a few months.

A Washington letter writer stated last week, that there were fifteen hundred young men in Washington soliciting commissions. Nothing was talked of but appointments.

At a recent ball at Nashua N. H., upwards of two hundred couples were present. We observe that thirty or more came from Woburn, a distance of 35 miles.

A young lady of Louisville, of high respectability, and much admired for her personal graces and accomplishments, recently chastised a clerk in a store in the city, with a cowhide.

The Cambria took out the large sum of $216 000, besides the £4,117 11s. 8d (over $19,000) transmitted by Bishop Fitzpatrick, for the relief of the suffering people of Ireland.

The State of Florida has repudiated its last motto, " Let us alone," and substituted in lieu thereof, " In God is our trust."

A codfish which weighed ninety-eight lbs., and measured four feet eight inches in length, was recently sold in the Bangor market.

The Boston Bee and Worcester Budget have been puffing one another quite *flat*-teringly. Birds of a feather.

A fit of the cholic makes a crown uneasy, and turns all the charms of empire into dissatisfaction

The Atlantic's bell, which tolled so long and dolefully over the sad scene of the wreck, has been purchased for a floating chapel, N. Y.

A line of telegraph is in progress of erection from Pittsburg in the direction of Columbus, O.

The iron steam frigate Allegheny has left Pittsburgh for Pensacola, via. New Orleans.

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DAILY WORK.

Who lags for dread of daily work,
And his appointed task would shirk,
Commits a folly and a crime:
A soulless slave—
A paltry knave—
A clog upon the wheels of Time.
With work to do, and store of health,
The man's unworthy to be free,
Who will not give,
That he may live,
His daily toil for daily fee.

No! Let us work! We only ask
Reward proportioned to our task:—
We have no quarrel with the great;
No fued with rank—
With mill, or bank—
No envy of a lord's estate,
If we can earn sufficient store
To satisfy our daily need;
And can retain,
For age and pain,
A fraction, we are rich indeed.

No dread of toil have we or ours;
We know our worth, and weigh our powers;
The more we work, the more we win:
Success to Trade!
Success to Spade!
And to the Corn that's coming in!
And joy to him, who o'er his task
Remembers toil is Nature's plan;
Who, working, thinks—
And never sinks
His independence as a man.

Who only asks for humblest wealth,
Enough for competence and health;
And leisure, when his work is done,
To read his book,
By chimney nook,
Or stroll at setting of the sun.
Who toils as every man should toil
For fair reward, erect and free:
These are the men—
The best of men—
These are the men we mean to be!

Poetry with a Present.

Accept dear maid, this beauteous rose,
To deck thy breast so fair,
Observe its hue, nor wonder why
It blushes to be there!

THE LADY'S ANSWER.

I will accept thy beauteous rose,
And on my breast enslave it;
But should it blush, I should suppose,
'Tis for the fool who gave it!

Seasonable Epigrams.

If our *Taylor* in keeping Saltillo secure,
Should with *Wooldress* the Mexican forces;
It is but to suit with the season I'm sure
That he uses such homely resources.

At Orleans, when Jackson was *dressing* John Bull,
The coincidence can't be forgotten,
His taste was the same, but not having got *Wool*,
The material used was plain *cotton*.

Corrosion of Iron Rails in and out of use.

The researches on this subject are still in progress, and experiments are being made upon six different lines of railway. The principal facts already ascertained are:—1st. That there is a real difference in the rate of corrosion between the rails in use and out of use; that this appears to be connected with their peculiar molecular condition so induced. 2d. The determination of the complex conditions as to magnetism, which affect rails some time in use, producing both induced and permanent magnetism in the rails. each rail being magnetic with polarito, and having from four to eight separate poles each.

Mr. Hunt has stated in confirmation of the experiments of Rutter—that magnetism has the power of protecting iron from corrosion; to which he referred the protecting influence exerted on the rails in use on railways—*Eng. Journal.*

A Real Grand-daddy.

A man named Daniel Aiken died in Wexford, Canada West, a few weeks since, aged 120 years. He had during his life contracted seven marriages, and had 570 grand-children and great-grand-children—370 boys and 200 girls!

THE WEATHER, &c.

WEDNESDAY, FEBRUARY 24th.

	Hours, A. M.									Hours, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Therm.			10	11	14	17	22	23	24	25	25½	26½	26	23½	21	22	23	23	22
Wires,			42	42	44	45½	47	47	47	47	46½	47	47½	46	45½	46	46½	46½	46
THURSDAY, 25th.																			
Therm.		22	22	23	24	24½	24½	24	24½	26	26	26	26	26	24	24½	24	24	24
Wires,		45	45	46	46½	47	46½	46	46½	43	46	46	46½	46	45½	46	46	46	46
FRIDAY, 26th.																			
Therm.		19	19	19	19	23	25	26	26½	27½	28½	28	28	27	26	26	26	26	26
Wires,		44	44	44	44	47½	48	49	48	48½	49	48	48	47	47	47	47	47	47
SATURDAY, 27th.																			
Therm.	31½	31½	31½	33	33	33	34	35	36	36	37	38	39½	41	37	38	37½	38	37
Wires,	50	50	49	50	50	50	50	51	51	51	51	52	53	53	49½	50	50	50	50
SUNDAY, 28th.																			
Therm.			34½	34	34	37	37	38	39	41	40½	38	36	36	34	34	33	32	31
Wires,			49	49	49	49	50½	50	51	51	51	50½	49	48½	48	47	47	47	48
MONDAY, March 1st.																			
Therm.			28	27	32	35	36½	36	37	37½	37	37	35½	33	31½	30	30½	30	30
Wires,			46½	46	48	50	51	50	50	50½	50	50	50	48	48	47½	48	48	48
TUESDAY 2d.																			
Therm.			26	27½	30	32½	34	34	35	37	39	39	37	35	32	29	28	27	27
Wires,			46	47½	48	50	51	50	51	51½	52	52	51	50	48	47½	47	46	48
WEDNESDAY 3d.																			
Therm.			21	23	27	32	35½	36	40	43	42	40	38	37	35½	35	34½	34½	34
Wires,			45	46	48	50	51½	52	53	53	52	51½	50	50	50	49	49	49	49½
THURSDAY, 4th.																			
Therm.			33½	34	36	38	40	40	43	43	42	43	40½	38½	36	34½	34½	32	30
Wires,			48½	49½	50	51½	52	52	52	52½	52	52½	51½	50	49½	49	49	48	47
FRIDAY 5th.																			
Therm.		28	27½	28	31	34	36	37½	38½	41	41	41	40	38	34½	—	31½	30½	29
Wires,		46	45½	47	48	50	51½	52	52	53	53	53	52½	51½	50	—	48	47½	47
SATURDAY, 6th.																			
Therm.		29	29	30	34	39½	40½	41½	43	44	46½	47½	44	41	37	35	37	36½	36
Wires,		47	47	47	50	52	53	53½	54	54½	55½	56	54	52	49½	48	49	48	48
SUNDAY 7th.																			
Therm.			32	32	36	37	39	43	48	52	49	46	47	44	42	40½	42	42	—
Wires,			48	48	49	50	51½	52½	54	57	56	54	53	53	52	49½	51	51	—

MONDAY 8th.

Wires at 2 A. M, 52; 3, 53; 4 to 7, 54. Thermometer at 2 A. M. 42½; 3, 44; 4 to 7, 47.

The record as published last week was incorrect. The half degrees were omitted; these are material, *very material;* there are also some figures wrong, viz: Wednesday, 17th, 4 P. M., should be 53, instead of 52; Friday, 19th, 5 A. M., should be 47 instead of 57; 8 P. M., 50 instead of 49; 9 P. M., 48 1-2 instead of 50, and 10, 49 1-2 instead of 48, and next morning at 5, 49 1-2 instead of 49; Sunday, 21st, at 8 P. M., 47 1-2 instead of 37 1-2; the wires have never been as low as 37 1-2, such a state of atmosphere would fall below the temperature of the arctic pole. These corrections are important for this, which follows:

"A shock of an earthquake was very sensibly felt in all parts of this county, on Friday evening last, at a few minutes after 9 o'clock. The shock was so sensibly felt, and the accompanying rumbling noise so distinct as to cause some of our citizens to go into the street, some of them under the impression that a chimney was on fire. In some parts of the county, we are told by individuals that they felt the houses shake, and heard the glass rattle."—"Belfast, Me., paper of Friday, Feb. 26th, 1847." New York Journal of Commerce of Wednesday March 3rd, 1847.

REMARKS.

Feb. 24. Dark, blue cloud in S. W., at 4 P. M. Cold, 10° below zero at Albany in the morning, and 20 degrees below zero at the Shakertown of Niskauna. Feb. 25, snow fell before day light, re-commenced at half past 6 A. M., ceased at 15 minutes past 1 P. M. Feb 26, at 4 P. M., dense cloud at South. Feb. 27, at 2 o'clock A. M., thermometer 30; wires 49; both having risen in the night; 3, thermometer 30; wires 49—snowing; half past 4 A. M., hail; half past 6 A. M., rain; at 7 A. M., thunder and lightning; at 7h. 20m. P M, thermometer 37, wires 50; 7h. 22m. a second discharge of lightning and thunder, thermometer 37 1-2; wires 50—7.33 and 7.45 both wires and thermometer remained the same as at 7 22—the thunder therefore did not cool the air.—I placed near me at the window two magnetic Spindles which were resting on brass pivots one inch high, which had undergone a manipulation with a view to make them sympathetic, these spindles are cylindrical, they were not affected in the least by the electric discharges from the clouds. The quantity of rain which fell during this storm was 2 inches, 90-000 of an inch at the New York Hospital, and 2 inches and 20-100 at Erasmus Hall Academy, Flatbush, L. I. Raining at Washington city 2 A.M. Feb. 28, Chain clouds were active in the high atmosphere. March 2, from Saturday to this day three feet of snow had fallen at Rome, Oneida County. March 4, a paralized atmosphere. March 6, chain clouds and great activity in the high atmosphere at 5 A. M. and at 9 A. M., a dense cloud settled down and ranged to the North East. March 7, raining at 5 P. M., hard rain during the night at intervals.

The state of the atmosphere for the three last Saturdays indicate a distant disturbance.

E. MERIAM.

Brooklyn Heights, Monday morning, March 8, 1847.

Earthquake in New Hampshire.

I have received a letter from Dudley Leavitt, Esq., dated Meredith, New Hampshire, Feb. 27, 1847, in which he states as follows:—

"February 14th, about five o'clock in the morning, a slight shock of an earthquake passed under as from South easterly to Northwesterly, at which time the snow was fast falling from a squally cloud which apparently rose in the westerly quarter of the horizon. After the squall of snow and wind had passed over, the remainder of the day was considerably calm and pleasant. The preceding day was uncomfortably cold and windy if not squally; a state of the weather which does not generally nor often immediately precede an earthquake. It appears highly probable that this earthquake proceeded from the same source in which the "Deerfield Pheusmena" or subterranean shakes originated."

The Brooklyn Evening Star of Monday Feb 15, 1847, contains my published observations for the 13th. 14th and morning of the 15th of February, as follows: "*The Weather.* This morning, from 1 to 3 o'clock, clear star light. Wires at 47, at 10 o'clock and continued at that until 3; at 4, 48; 5, 49; 6 and 7, 49 1-2. Thermometer at 1 to 3 this morning, 29; 4, 30; 5, 31; 6, 32; 7, 32 1-2. Atmosphere clouded at 4 o'clock. From 9 on Saturday evening, to 10 last evening tee wires have vibrated but three degrees and the thermometer during the same time has fluctuated 11 1-2 degrees. The wires were at 47 last evening at 10, and the thermometer was at 30 the same hour. Monday morning, 7 o'clock, Feb. 15. E. M.

The Star of Tuesday Feb. 16, contains the record of my observations as follows: "*The Weather.* The wires were highest at 2 P. M., yesterday, 57 1-2; the thermometer was highest at 3 P. M., 47 1-2. At 11 last night the wires were at 45 and continued at that throughout the night and remains at that at 7 this morning with a snow storm overhead.—The thermometer at 11 last evening was at 35 and fell continually during the night and is at 7 this morning at 26; having fallen 11 degrees while the Meteoric, Magnetic & Electric wires have remained in *equilibrium.* Tuesday morning Feb. 16. E. M.

Thus the wires accurately indicated the earthquake and this indication when compared with about 40 others will be found to be of the same uniform class. On the 16th a vessel bound from Havre to New York encountered a gale at sea and the thermometer at Quebec was 22 degrees below zero.

Meredith, New Hampshire, is on the west side of Winnepeseogee Lake—the town contains a mountain and several ponds. This section of New Hampshire has recently been subject to shocks of earthquakes. On looking over the Maps of Maine and New Hampshire I find that ponds are numerous. Such localities seem peculiarly subject to earthquake convulsions.

E. MERIAM.

Brooklyn Heights, March 9, 1847.

Hydraulics.

The subject of the following letter, being one which, in its principle, occupies the attention of many persons in various parts of the country, we give the letter entire, though contrary to the intention of the writer.

CLEVELAND, (O.) Feb. 5, 1847.

In our city, (Cleveland,) the Ohio Canal lies in a parallel direction (at the height of 14 feet above) with the Cuyahoga River, furnishing many excellent mill sites; but, unfortunately, there is only sufficient of surplus water in the canal, to turn two or three wheels, giving power to a flour mill and a turning lathe: now, if by less water as great, and perhaps greater power can be obtained, Cleveland *might* be a manufacturing city, &c. &c. Cannot this be done by means of a syphon, since water, by the pressure of the atmosphere, is raised to 30 or 34 feet. A small quantity falling from so great a height, (and more according to the already existing fall,) in an unbroken column—with accelerating velocity—upon a wafer wheel, must give great power comparatively. The syphon might be made I should think, of leather, after the fashion of the common fire engine hose, but perhaps, it would not be quiite strong enough to sustain such a column of water, (6 to 12 inches in diameter,) could it be made of sheet iron or tin? the *great* difficulty being to make it air tight (*a*) The vacuum can be formed by filling the tube or hose with steam,—the scaffolding (of which I have a plan) can be made by any ordinary mechanic.

The above principle (if the conclusions, &c. are correct,) can be applied in many places, where both qnantity and fall of water are insufficient for any useful purpose on the common plan, or where racing is inconvenient or expensive. (*b*)

If the apertures of the syphon were close ot each other, somewhat in the shape of a horse shoe, or rather an inverted U, would there be power gained sufficient to force the water back again into the first reservoir, through an Archimedes screw, or other machine? (*c*) If there is more than sufficient, a second syphon might be introduced, one to turn machinery and the other to force the same water back, to supply the first, and thus (minus evaporation, &c.) we could use the same water continually.

The above, is perhaps, but the chimera of a young mechanic, not out of his "teens," but something is *sometimes* found, even "among rubbish." At all events, if there be no light *in* it, please *make* light *of* it: but be sure and don't make a mistake and do it with that "everlasting" *sharp pointed* pen of *yours*, instead of the candle (*d*)

May I trouble you *again*, for opinions upon any machine or plan which may require it? (*e*)

E. M'G.

REMARKS IN ANSWER.

(*a*) There is but little difficulty in constructing syphons in various ways.

(*b*) The practicability of conducting a column of water through a syphon 25 feet high is admitted; but our correspondent overlooks the fact that that the whole weight of the ascending water in the first section of the syphon pipe, must be deducted from the power or weight of its descent through the opposite section.

(*c*) No; no possible mode of the application of the power of water by its descent can be made to raise an equal quantity to an equal height.

(*d*) We have no disposition to do either.

(*e*) Certainly, it is our business and pleasure to disseminate light when required, especially in dark places.

Never enter a sick room in a state of perspiration, as the moment you become cool, your pores absorb. Do not approach contageous diseases with an empty stomach, nor sit between the sick and the fire, because the heat attracts the thin vapor.

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NEW INVENTIONS.

Hubbell's Shell.

Many modern inventions appear disposed to render warfare as destructive as possible; whether it is for the sake of promoting peace by making war dreadful, or from other motives they may best judge. One of the latest improvements in the art of destruction, is an explosive shell invented by W. W. Hubbell, of Philadelphia, of which the inventor says:—This Shell, *having been fired out of a cannon*, explodes from concussion, *not otherwise*, and destroys a vessel's side by its explosion on the instant, and in the act of its penetrating, without regard to the distance of the vessel from the place of discharging the Shell. Its nature is such, that a vessel carrying any of the different kinds of cannon can, with the shells, blow to pieces another; and a fort with them can destroy a fleet, by opening the batteries on the vessels as soon as they are within effective range; which, with 12 inch guns, in any distance within 3 1-4 miles, and proportionably with smaller sizes. The Shell is the discovery or invention of five year's attentive study, and experimenting in chemistry and gunnery, during which time 87 Shells, in the various stages of the experimental proceedings, were prepared and tried, the guns used being a 6 pounder carronade, a 12 pounder howitzer, a long straight bored 32-pounder cannon, and a sixty four pounder Paixhan gun, until at last the Shell has been produced, a perfect invention, for destroying vessels, by the aid of all sizes and kinds of cannon. It has been examined by competent officers, and pronounced an improvement above any shell yet invented or known, either in Europe or the United States.

Improvement in Tanning.

Much is said of an improved mode of tanning invented by a Mr. Snider of Ohio, and now in operation at Dayton. Whether Mr. Snider's improvement will be able to compete with those of Mr. Cambell of this city, and noticed particularly in a former number of this paper, must remain a doubt in our mind till we have further intelligence. We copy the following from one of our exchanges.

"Mr. Snider, a practical man, has contrived a mode and machinery to puncture the entire hide, before being placed in the tan. The hide being filled with small holes, the tan acts upon it immediately, and converts it into perfect leather in the short space of *six* to *eight* weeks. With this improvement, half the former capital is required to conduct the tanning business. Mr. Snyder has gone to London with his improvement, and by the last steamer we learn, has taken out patents in England, France and Holland. He has connected himself with one of the most eminent tanners of England; his leather has a preference at advanced prices; and he has orders for more than he can make."

New mode of Propulsion.

Mr. Sewall Short, of Lower Mystick, Ct., has a new plan of applying steam power to vessels. He places two cylinders, one on each side of the keelson, running entirely through the vessel from stem to stern, and opening into the water at both ends. Then he arranges floats or short pistons upon an endless chain passing through the cylinders, and returning along the side of the vessel, or over her deck, and running upon wheels fore and aft. The force of the steam is exerted upon the floats, which find ample resistance upon the water in the tubes. The power is on this plan applied at the bottom of the vessel, and in the direct line of her motion.—*Ex. Paper.*

Mr. Short's invention will probably come short of his anticipation. We happen to have $50 worth of experience on that subject, and have ascertained that a series of floats of any number or extent, meet no more perceptible resistance in the water than a single float. A current being produced by the first float, it has no power on the water longer than until it is succeeded by another.

Floating Elevator.

We were yesterday shown a draft of a new contrivance that has been invented and patented by Mr. A. S. Bemis, of Buffalo, for discharging and weighing grain from vessels into canal boats and warehouses. It is constructed after the style and model of dredging machines, and floats in the harbor. One is to be built and launched ready for Spring service, 50 feet long and 20 feet wide, with an engine of 8 horse power This is expected to discharge from 1,200 to 1,500 bushels per hour. The advantage which this machine will have over stationary elevators, is its capacity to change position, and to discharge cargoes during a crowd, which at many times is a great convenience.

The Self Detacher.

This name is given to a new improvement in railroad cars, invented by Messrs. Butterfield and Cutting of Boston. It is to be applied to each car in a train, and in case of any obstruction on the road calculated to throw the engine off the track, or raise the wheels, each car is instantly detached from the other by the operation of a self-acting lever, thereby saving the passengers harmless.

This invention may *possibly* be useful; but we are inclined to attach much more importance to any invention by which the train may suddenly and safely be brought to a stand, when danger appears.

The Galvanometer.

Mr. J. H. Emsnar of this city has invented a machine for the purpose of ascertaining the strength of any galvanic battery, or of regulating the same. This instrument indicates the force of the attraction of a magnet, in pounds ounces &c., but does not indicate either the quantity or intensity of the fluid. Should the inventor add such improvements as will distinguish and measure these properties, it would greatly increase the value of the instrument.

New Locomotive Mechanism.

A working model of a new plan of railway locomotion has been exhibited in London, with a view, as stated, to the adoption of means for securing the great objects at which railway enterprise aims, namely, safety to human life, certainty of action, and economy in construction and working. By the new plan, the carriages are proposed to be built upon platforms, which will glide on the peripheries of parallel lines of wheels, mounted on chains, stanchions or piles, rendering rails and bridges unnecessary. An immovable rope or chain forms a fulcrum, against which the motive power is to be applied. The rope or chain passes round a drum fixed on a travelling platform, the drum being set in motion by a small engine fixed on either side of it, on the platform, underneath which, ribs, or flanges, about a foot in depth, make it difficult, if not impossible, for it to get off the wheels. The line of traction being invariably in the middle of the road, it is contended that no probable cause of accident can occur to disturb it, and that it will avoid the great danger incident to railways from the breaking of an axle, a wheel, or a rail, or from a sharp curve. An experimental road, of about a mile in length, is to be constructed near the metropolis.

New Check Loom.

The Mechanics' Mirror, for February, notices a new machine of this description, the invention of Mr. Peacock, of *Ida Mills*, Troy, which promises to be of much utility. The Mirror says:

Of its originality there is no doubt; in the simplicity and beauty of its operations, there is no ambiguity; its advantages, time alone will fully develope.

When we remember, that but eight years ago, there was not a *check loom* in this State, and when in the year following, James Allen bro't his check loom into this country, it was looked upon as something extraordinary; and when we now reflect that but two colors could be wove equally by it in the weft, and that now, no less than four colors can be wove and with a variation of from two, to two hundred and twenty pickings; well may we be surprised at the rapid improvement, we should say, at the leaps made since then in the progress and perfection of power loom weaving.

Very good ginghams could be manufactured by the two shuttle loom of Mr. Allen, but there was not enough of variation in the colors, and to give a great variety of shades in the warp, the fabric will neither be correct nor chaste; there must be a balancing of the shades in crossing, or the work looks disproportioned and untastefully executed. There is nearly as large a field for the display of taste and skill in gingham, as in harness loom weaving. The choice of colors, their blending, shading and contrasting, require both taste and skill; the two shuttle loom presented but little room for variation, but a wide field was soon opened by the addition of another shuttle. But although the three shuttle looms make a beautiful fabric and work well, yet by the shuttle moving up and down in a sliding box there is not that variation in the picking, which is requisite in the weaving of some patterns.

The idea suggested itself by Mr. Peacock more than a year ago, that the shuttles of the *check loom*, might be made to revolve on a cylinder in more numbers than by a sliding box; the same idea presented itself to another man at nearly the same time—Mr. Neal of Taunton, Mass., who invented the revolving box of the present four-shuttle loom; and for which he has got a patent in America and England. The great difference between the sliding box and the revolving one, is that more colors can be used in the weft by the latter than the former, consequently a greater variety of pattern.

The beauty of gingham depends upon the arrangement of colors; and according to their absorbing or reflective nature, a greater number of threads of the one and fewer of the other, may be required for correct blending and good contrast. Mr. Neal's loom was at fault in this respect, for his patterns were wrought by two notched wheels and they all presented a homely sameness of colors. But this difficulty is beautifully surmounted by the *check loom* at Ida Mills. Mr. Peacock, the agent of the factory, has invented a single pattern wheel which can weave a pattern from two, or two hundred and twenty pickings, as has been mentioned before: but the great beauty of the invention, is, that this wheel can be altered to work any pattern whatever. The pattern wheel is studded with moveable iron pinions, each pin has two pickings, and by removing one, two, or more, you can change the threads of the colors in endless variety; also when the revolving box has performed a semi-revolution, it can spring back, and two shuttles in this manner can make three stripes, one of blue may be bounded on each side by a stripe of orange. The first time we saw this loom, the pattern wheel struck us as being the most beautiful invention; at that time we did not know that Mr. Peacock was the inventor, and we consider that it is an act of justice to notice the invention in so special a manner; for he has not taken out a patent although advised to do so by no less a personage than Mr. Benjamin Walcott of York Mills; this article will therefore prevent any other person who may hereafter claim the invention. It was in Ida Mills where the pattern of gingham was wove, which took the gold medal at the last New York State Fair.

From the opinion of Mr Peacock, (and he is a gentleman of great experience, knowledge and skill,) the loom can be greatly improved, but from the principles on which it is formed, it is calculated to produce an entire revolution in power loom weaving. The hint and advice of Mr. Walcott speaks volumes in its praise; yet unless the machinery is correct to an hair breadth, there is no profit to the weaver or manufacturer.

Improvement in the Manufacture of Iron.

This invention, for which a patent has been obtained by Mr. Thomas L. Rushton, of the county of Lancaster, England, relates to the manufacture of malleable iron in reverberatory furnaces.

The first improvement consists in mixing hammer slack, roll scale, red ore, calcined iron stone, or other oxide, in a pulverized state, with a proportion of finely pulverised charcoal, coke, or other suitable carbonaceous matter (which should be as free as possible from sulphur,) and introducing the mixture into the furnace before, or along with, or immediately after the charge of pig or refined iron. The mixture of ore and carbonaceous matter is turned over from time to time, until the iron is melted, and then they are worked teogther in the usual way. The patentee says, that this process is very similar to that described in the specification of a patent which was granted to W. N. Clay, March 32, 1840; but, in the present instance, the proportion of carbonaceous matters varies from 17 up to (but not including) 28 per cent. by weight of the ore or oxide; whilst Clay's invention was confined to the use of not less than 28 per cent. The proportionate weights of carbonaceous matter and ore or oxide employed, within the above limits, depend upon the quantity of carbon and oxygen they respectively contain, the description of pig iron used with them, and the amount of pig iron to be added to the mixture. The following proportions produce an abundant yield of excellent iron: 480 lbs. of No. 5 pig iron, 84 lbs. of Lancashire hematite ore, and 20 lbs. of coke-dust: if No. 1 pig iron be used a smaller quantity of carbonaceous matter will be required; but if the charge of No. 4 pig iron be reduced to 420 lbs., the weight of ore or oxide should be increased to 180 lbs. and the coke to 48 lbs.

The second improvement consists in the addition of clay, agilaceous ironstone, or other substance containing alumnia, to the ores or oxides which produce iron of the quality termed red-short. The clay or other substance used, should be ground fine and dried, before being mixed with the ore. A larger quantity of carbonaceous matter (generally above 28 per cent.) will be required for a given quantity of ore, than if no clay were used; for the clay, in addition to its capability of taking up the carbon, has a tendency to diminish the contact of the ore or oxide with the carbonaceous matter, and thereby prevent a complete decomposition. The proportion of clay will vary with the quality of the ore, but from 4 to 10 per cent. of the weight of the ore will be sufficient when operating on the Lancashire hematite ores. If too much clay be used, the tap cinder will be very sluggish, and the ball, when under the hammer, will emit continuous showers of dark red cinders; and if too little be employed, the iron will retain some of its red-short quality.

The third improvement consists in combining a portion of the tap or flue cinder of puddling and balling furnaces with a portion of clay, chalk, carbonaceous matter, and rich iron ore, or some of these substances, and manufacturing the mixture, either with or without pig or refined iron, in reverberatory furnaces into malleable iron. The materials must be pulverized and dried before being mixed together. The relative proportions of the different substances may be as follows:—150 lbs. of tap cinder, containing about 71 per cent. of protoxide of iron, 150 lbs. of Lancashire hematite ore, 20 lbs. of pulverized Worsley fire clay, 20 lbs. of chalk, and 100 lbs. of the coke dust.

With regard to the first part of the invention, the patentee says he does not claim to have discovered the manufacture of malleable in reverberatory furnaces, either with or without a portion of pig, or scrap, or refined iron, nor the advantage of pulverizing the ores and carbonaceous matter; but he claims the manufacture, in reverberatory furnaces, in the manner above described, of malleable iron by means of ores and carbonaceous matter, mixed in proportions limited as before mentioned, and combined with a portion of pig or refined iron. Under the second improvement he does not claim to have discovered the advantage of using a portion of clay or argillaceous iron stone in the manufacture of iron from certain ores, that having been previously done in the manufacture of pig iron from such ores; but he claims the use of clay as an ingredient to be employed in a pulverized state, mixed with certain ores and carbonaceous matter, also pulverized for the manufacture, both and without pig or refined iron, of malleable iron in reverberatory furnaces. With regard to the third improvement, he does not claim to have first applied a portion of tap or flue cinder to other silicate or oxide of iron with lime or carbonate of lime, and with iron ore, clay and carbonaceous matter, all these having long been used in the manufacture of pig iron; but he claims the manufacture of malleable iron from the combination of those substances, pulverized, both with and without pig or refined iron, in reverberatory furnaces, as before described.

Information has been received from the Sandwich Islands that the inhabitants of some districts were suffering the severity of the famine. The sole dependence of many of the natives was upon roots.

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NEW YORK, MARCH 13, 1847.

A Series of Casualties.

History does not, probably, furnish an instance of a series of casualties in rapid succession, equal to that which occurred on the Worcester railroad on Thursday of last week. The series commenced on a train which was leaving Worcester for Springfield. In passing under a bridge about a mile from the depot, the head of one of the brakemen came in contact with the timbers of a bridge, severely injuring him, whereupon the conductor attempted to back the train to the town to give relief to the wounded man, and on the way met another train, and came in collision with such force as to break up several of the cars. A short time after another train left Worcester for Boston, and having proceeded about two miles came in collision with a gravel train which was coming up. The engineer of the gravel train, seeing that a collision was inevitable, reversed the engine and jumped off, as did also the other hands on the train. The consequence was that as soon as the cars met the gravel train started the other way, without the engineer, and was met by another train from Boston, and another collision took place; the engineer and fireman of the Boston train saved themselves by jumping, and no one was injured. A few minutes afterwards the steam boat train from Boston came up, and attaching the two other trains to itself, proceeded towards Worcester on the south track. From this stage of events we copy from the Worcester Christian Citizen.

"When about a mile from Worcester while Flint (one of the road hands) was standing upon the platform of the third car from the engine and Mr. Rufus K. Porter,* baggage master of the New York train, was standing by his side, another terrible collision took place, which resulted in consequences more dreadful than any that had before happened. This accident was caused in consequence of thirty large freight cars having been left on the track of which no notice had been given, and upon which no signal light had been placed. The crash was tremendous, several of the forward cars were broken to pieces, and trifling injuries sustained by some of the passengers. The car upon which Messrs. Flint and Porter were standing, was jammed into the one next forward. Mr. Flint was caught between the iron railing of one car and the wood work of the next, and crushed in the most shocking manner. Mr. Porter was forced in the same direction against the door of the next car, which fortunately gave way, and thus protected his vital parts from injury; his leg, however, between the knee and ancle, was crushed and badly broken, and also his toe, and he received other severe bruises in different parts of his person. It was found impossible to extricate Mr. Flint until all the cars could be separated, which was the work of some minutes. He was taken to the village, and every attention paid to him, but without avail: he died at 3 o'clock the next morning, having suffered the most intense agony from his wounds. Mr. Porter was taken to the American Temperance House, his limbs were set by Dr. Green, and he is now doing well, and in a fair way to recover. That no more were injured in such a series of disasters, appears to us almost a miracle. We earnestly hope that this new illustration of the need of legislation upon the subject, will receive the attention of our lawmakers at the present session, so that the most stringent penalties may be imposed upon all railroad corporations, which will have the effect to protect the public from such wholesale destruction of life and limb, as the past three weeks have exhibited in consequence of the carelessness of those who have these matters in charge."

*Son of the Editor of the Scientific American.

It is expected that at least $1,000,000 will have been shipped to this country from England before the first of May.

The New Jersey Genius.

There is a person confined in the Penitentiary at Trenton who has the wonderful faculty of inventing various improvements, *after* the descriptions thereof with illustrations have been published in this paper; and it is amusing to see with what avidity the press—certain newspapers we mean—seizes on, and reports these wonder productions of the Jersey prisoner. Quite recently it was announced that he had invented a machine for taking the votes of a Legislative Assembly Now another invention is announced, and readily finds a place in the columns of some of our exchanges whose editors must have seen our full description of the same invention, but did not think it worth a notice till it was invented by the imprisoned genius. The following is the reported description of the *new* Jersey prison inventor, being no less than a letter printing telegraph. Our readers may judge whether there is any difference from our described machine.

"By simply striking at one end of the telegraph a set of keys, each of which answers to a letter or mark of punctuation, a communication will be printed at the other end of the wire. The keys may be touched as rapidly as the operator chooses. It does not require a certain time to make the letters, as in Morse's or House's invention. Touching the keys does not make the letter; it only sets in motion an instrument which goes on itself very rapidly, makes the letter, and then stops. All that the operator has to do, is to sit down at his keyboard, with his communication before him, and touch the keys, as fast as fingers can do it."

Holding to Bail.

We have often regretted to see the partiality of laws in permitting rich rascals to go at large under a paltry bail, while a poor man under an accusation of crime is subjected to close confinement. An instance occurred recently in Philadelphia in which a man shamefully whipped his wife, and being complained of by his wife's sister, was held to bail for $600 when he returned and severely whipped the sister. For this he was held to bail for $750 and will, perhaps, destroy both wife and sister to suppress their evidence. We think the magistrate richly deserves whipping for letting the scoundrel off on bail the second time.

Depository of Manufactures.

We have received a pamphlet entitled "A plan and constitution for a Depository and Sale of American Mechanic Arts, Sciences & Manufactures," which contains a general plan for exhibiting and selling all manner of inventions and manufactures by system, under the management of agents appointed by an association of members. The proposed constitution is published by Mr. Mellen Battel of Albany, and we see no reason why an institution of this kind should not, with judicious management, be beneficial to all concerned.

The Worcester Budget.

We observed in a late number of that paper, some rather severe, not to say uncivil remarks on the subject of our having inserted an article from that paper without full credit, although we have the proof at hand that several of *our* articles have been inserted in the 'Budget' as original and without credit. We have no wish to continue the exchange.

Public Works in New York.

A bill has been reported in the Legislature of this state for appropriations for the public works under the amended Constitution, from funds on hand, and the anticipated surpluses for the current year, as follows:—

Erie Enlargement : :	$558,000 00
Genesee Valley : : :	128,720 37
Black River : : : :	100,000 00
Oswego Canal: : : :	100,000 00
Oneida River : : : :	20,000 00

The Alleghanians.

The lovers of vocal melody are informed that this highly popular company of unrivalled singers have decided to give another concert at the Tabernacle, on Monday eve., March 15. The programme for the evening is unusually interesting, and well arranged for the gratification of an audience of at least four thousand people, which is the lowest number we anticipate for the occasion.

Mineral Treasures of South Missouri.

This country abounds in Iron and Copper; in some places Lead is found; Zinc and other metals are also discovered In the northern part of Shannon county, red porphyry abounds—it is very hard, and would admit of a high polish. This may, hereafter, become valuable. In the same neighborhood is a hill of chalk. South of this are immense masses of iron, of almost every possible formation.—Near this point the three forks of Black river unite. Here the traveller has a natural Macadamized road, for the whole country is covered with shattered rock, not longer than a hen's egg, and this state of things continues at intervals for hundreds of miles to the southwest. About a days journey to the south-west, lies the Current river, and upon it are situated inexhaustible copper mines, which are now suffered to lie idle. These mines afford the sulphuret, the green and blue carbonate, and the red oxide of copper. A few miles from these is found white arsenical copper. Near the mouth of Jack's Fork of the current river, is found cylindrical hematic iron, the bars of which are of the length and size of gun barrels In this neighborhood and still further down, the country is very hilly, and on the top of almost every hill is found the hemitate iron of the same formation. Rods of iron have been drawn out from this ore in a common blacksmith's shop, and it readily melts with a common blow pipe and candle. Excellent water privileges abound in this neighborhood.

Lower down and nearer the river, high hills of granite rock present themselves; this primitive formation is of a redish color, abounds in many parts of the country, and might be transported by water to the lower country, for building purposes. The river here is doubled in size by an immense spring that issues from the base of the granite hills. Below this point it is navigable for flat boats of a large size; many of the hills of this country are nearly covered with chrystalized quartz, which glitter like diamonds in the sun. Hills covered with these chrystals, and with fragments of silicious limestone, jasper and chalcedon, relieve the eye of the traveller as he descends the Current river.

Telegraph to New Orleans.

We learn, says the N. O. Picayune, that arrangements are on foot for the construction, at an early day, of a continuous line of the magnetic telegraph between this city and New York—a liberal act of incorporation having been obtained, and an agent having already arrived in this city with the intention of immediately opening books of subscription for the remaining stock.

Distilleries and Breweries.

A meeting of the inhabitants of Belfast Ireland, was held in the town hall, on Thursday week, to consider the propriety of memorializing government to suspend the use of grain in distilleries and breweries while the existing scarcity of food continues in the country.

Manufacture at the South.

The cotton mill of the Arcadia Manufacturing Co., near Pensacola, is now in successful operation, and are turning out from five to six thousand yards of drillings and shirtings weekly, which are as cheap as those manufactured at the North and fully equal in quality. There are at present, only about forty hands employed in this mill, all of which are black.

Western Improvements.

The Legislatures of Indiana and Illinois have passed a bill to incorporate a company for the improvement of the navigation of the river Wabash. This river is subject to the jurisdiction of the two States, and hence the necessity of their joint action.

The Muscogee Democrat.

We have received an early number of a new paper under this title published at Columbus Ga., by L. F. W. Andrews, Esq. From the specimen before us, which is both intelligent and interesting, and evinces good taste and ability in its editorials and selections, we anticipate for it, an extensive circulation.

Iron Rule.

The Austrian Government prohibits every peasant in Gallicia leaving his dwelling after sunset; he must not hold communication with his neighbors, nor attend any assemblage.

The Augusta Grist Mill.

Of all the new machinery recently put in operation upon the Kennebec dam, none seems to promise more satisfactory results than the new grist mill recently erected by J. D. Emery, Esq. This mill is constructed on the most improved plan, so far as machinery is concerned, and will contain when completed, six run of the best quality of Burr stones, besides a corncracker, cleansers, &c. Four runs of these stones, for the custom work, with the necessary apparatus for cleansing, bolting, &c. and a corn cracker, are now in operation.—Two additional stones, designed for the manufacture of flour for the market, will be set in operation as soon as the river opens in the spring- The machinery of this portion of the mill is of the very first quality, and will produce flour fully equal to the best now manufactured in the country. That such an establishment was demanded by the wants of the community is fully established by the fact that it has been constantly thronged with customers since it first started. The machinery works in the most satisfactory manner. The proprietor sent us a specimen of Indian meal made from corn which had been cracked with the cobs, and then ground. From this meal we have had some of the best "Jonny cake" we have ever tasted. The machinery in this mill has been put up under the superintendence of David Beedy, jr., a skillful and intelligent millwright.—*Augusta Age.*

Perplexity in Mexico.

The following purports to be an extract of a letter from Santa Anna, sent by express to Congress.

"I am in despair at this very moment, for it is now the 2d day of the month, (January) and the different chiefs are almost mad, longing after provisions for their men. And still there are some writers who will enquire why our army does not move. This express has no other object than to make known our sad condition; and if the Government does not send quick supplies, I cannot say how this will end."

A Splendid Boat.

We learn from the "Reveille" that a boat is contracted for to be built at St. Louis, to be 250 feet keel, and 280 feet on deck; 36 feet beam, and 32 feet floor, with nine feet hold.—She is to be propelled by two engines, having cylinders 10 feet long and 30 inches in diameter. Her steam will be generated in seven boilers, 32 feet by 42 inches, and her wheel will be 33 feet in diameter, with a 15 feet bucket. To be finished, on the 1st of October next. This boat will probably be ahead of anything on the Mississippi.

Overland Mail to Oregon.

The undersigned will leave Washington, immediately on the adjournment of Congress, and Independence, Missouri, on the 1st of April, for Astoria, Oregon. Preparation is made to carry out a large mail of letters which must be post-paid to Independence, Missouri. No documents will be taken, except of much importance. The mail will arrive in Oregon on the 1st of June. S. M. SHIVELY.

It appears from late foreign papers, that the French Government has prohibited the manufacture of and sale of Gun Cotton, and ordered the keepers of shooting galleries not to allow its use on their premises.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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FOREIGN CORRESPONDENCE.

No. VIII.

Fine Arts in England—Glance at the Galleries.

LONDON, Jan. 1847.

My dear Sci.—

Among the things to be coveted of the Old World are the fruits of those finer arts which seem to flourish best, and to have flourished most under the munificence of kingly patronage and protection. The labors of those masters of the chisel and pencil, who fostered by ages that understood and admired them, gave birth to all that is most beautiful in marble and on canvas. England although producing comparatively few of the great creators, posseses a large share of the finest creations of art. It was at one period of European history, the forte of monarchs to draw around them by means of wealth and distinctions conferred—the elite of mind: the philosophers, the poets, wits, sculptors, and painters of their age. No matter where born, genius was looked upon as a God-send to the race, and that nation was most fortunate, who could produce or secure most of it. England abounds with paintings and sculptures—her lordly halls, palaces, churches and galleries, glitter with the treasures of the masters, whose fame is world-wide, and whose works in many instances are the "proudest memorial" of the nobleman's mansion. The finest statuary and paintings of England, are not for the public eye. They have been gathered from the length and breadth of Europe by the wealthy, and are distributed over the country here and there, according to the locality of their purchasers. The visitor to the house of Sir T. Baring will see one rare group—the fortunate friends of Mr. Hope, will see another, and so on, through every family of wealth and distinction in the land, there may be lound some chef d'ouvre of the chisel .to brush. We see advertised from day to day, catalogues of pictures for sale in this and the other city, "selected with great care" from the works of "the masters," and to be sold positively to the highest bidder. What sheer imposition it is on the part of the vendor, and what pitiable ignorance or gullibility on the part of the eager, rushing and all credulous public. Why, after half a century of contest between picture hunters, and statue gatherers, backed by hordes of wealth, Europe may be set down as thoroughly drained and ransacked of its "works by the masters," and if it was not the New World is as yet by no means the market for such dainty and inestimable wares! It is pretty well konwn by connoisseurs of the Arts, how many, and what were the productions of those geniuses, who, if advertised catalogues were correct, have most of them done work enough for a Hercules sculptor or painter, assisted by a score of superhuman armed apprentices to do "the rough." And connoiseurs also know where these works principally are, and what is more, they know that they require no heralding for a market.—How many "original" Vandykes, Corregios, and Titians, I have seen hanging in their new clean, gilt frames in the granite building corner of Chamber street and Broadway, "going, going, gone!" for from five to twenty five dollars, "dog cheap," since they were *real* originals. I dont believe many lovers of the art are deceived by such trickery, for trickery t is of a most desecrable and execrable kind, so far as the glorious memories of the great painters, whose names are thus "taken in vain," are concerned. There is not a picture by either of the names I have alluded to, and which are among the favorite artists of original picture sellers, that could be purchased for as many hundreds, as those filthy, baked daubs bring of single dollars. I saw a little fruit piece by Gerard Dow, a Dutch painter, far less celebrated than Vandyke, Rubens and Titian, sold for seven hundred guineas, over three thousand five hundred dollars, and the purchaser hugged his prize at that. The value of Raffaelle, Romano, and Tintoretti, are too well defined to permit such an absurdity, as faith in "advertised originals" for a moment. Buchanan, one of the finest connoisseurs of the Arts in England, as long ago as before the French Revolution, by commission of noblemen and others of abundant wealth, hunted every nook and corner of Europe, ready to purchase kingly galleries and private collections, at all hazards of cost, and he did secure a host of them. His published proceedings, with other statistics, show how carefully even in commercial crisises, the breaking up noble families, and amid the horrors of war, Europe has publicly and privately guarded the trophies of art. Napoleon's eye counted these in the spoils of battle, and the history of his plunder and the after-restoration of much that he had dragged from the Pantheons and Galleries of the conquered is well known to all. The works of the famous sculptors and painters have been held as national treasures, and as they are of a kind which when once destroyed or lost, no wealth nor power can restore, they have been estimated and guarded accordingly. England, as I said, has a large share, though less than France, or Italy, which has been the field for purchasers and pirates of art-creations, until she stands a poor shorn wreck compared to her former self. It is not strictly a sign in England that all the persons who have fine pictures, have fine taste. There is in every country a counterfeit of the genuine, and while the many who indulge in these things are prepared by education and intercourse with the world, to appreciate and enjoy them, another class follows like an appropriate tail, imitating as nearly as possible the body "gone before," who do all that money *can* do, that is, buy the pictures, frame them, and hang them against the walls. The one are sincere worshippers, the other fashionable humilitants, who fall down without knowing that the image before them is divine. Like the tailor and the butcher, who must wear white kid gloves and have a stall in the opera, because they *are able!* Among the fine galleries of paintings open to the public in and about London, are National, Dulwich, Hampton Court, and a small collection in the Pantheon, in Oxford Street Bazaar. This latter place has its interest enhanced by the possession of several pictures by the late Mr. Haydon. Among them is the "Satan and Uriel," and the "Assassination of Drutatus." Haydon, as you may remember, committed suicide nearly a year since, in despair arising from poverty,, and the coldness of the public, who seemed too much absorbed by other delights to watch and stimulate his genius. The rejection of his subjects for the proposed Cartoons in the new Houses of Parliament, added, doubtless, not a little to the fever of his soul, and he had the Academy and all its clique against him, because he took the ground and maintained it by indisputable proofs, that Academies have ever been the bane of genius, and an obstacle to the Arts in their master developement. Haydon's death at his period of life, when all the stores of his genius and study were fully ripe for harvesting, was a loss to the world. Beside being one of the most remarkable painters of the age, he was the best Essayist and Critic upon the Arts. Far superior to Hazlitt, who also was an artist and worshipper in the same field, as well as a professed lecturer and author. I could not confer a greater treat upon any lover of sculpture and painting, than to advise him to read Haydon's dissertation upon the Art of Painting, written for the Encyclopedia Britannica. It stands there beside Hazlitt's, like a ponderous javelin hurled clean through the subject at hand. The National Gallery and that at Dulwich, possess excellent and rare pictures, which one might study for a lifetime and feel himself exalted and glorified every day anew. It has been the design of the government, to whom these Galleries belong, to compass some work from all the masters. In many cases there are several by the same hand, but as yet they have not occured one from all. Some months since an incident occurred, which shows how nice and difficult a thing it is to avoid deception in the purchase of paintings. The Academy had long desired to possess a Holbein, since had in his lifetime been so associated with the art in England. A gentleman, who was considered a creditable amateur, got hold of one somewhere for a trifle, which fact came to the Academy Committee's ears. They opened negotiations, the gentleman set his price at five hundred pounds, the examining committee were satisfied *fully* as to its being an *undoubted* original, and purchased it. After a few months, suspicions arose against it, it was re-examined and found to be no Holbein, but an imitation properly baked for the occasion. With as little noise as possible, it was taken down from the gallery, and now graces some obscure corner of the British Museum. But there are splendors in that National Gallery. I must not be too enthusiastic, however, until I see the Louvre, but I shall ever carry with me the tender glow of Raffaelle, the deep tone of Rembrandt, the magic color of Titian—the fruit baskets of Dow, Wouverman's trees, and the glorious landscapes of Ruysdael, Pouissa, and Claude Lorraine. And those pale faces of Carracci's saints suffering martyrdom, and Cain bending over his slain brother, haunt my very dreams. The magnificent Scripture cartoons by Raffaelle, are at Hampton Court, among a profusion of splendors. Lovers of art may sincerely mourn that the grand collection gathered there by the taste and munificence of Charles I., was scattered by the zeal and fury of the Commonwealth, which in selling those gems from the country, equalled the mob that banished Aristides!

S. D. C.

Astounding Ignorance.

The report of the Register General, recently published in London, discloses a depth of ignorance and debasement among the poorer class of Great Britain, which would be incredible if it were not vouched for by official records. A London paper of the 17th ult.,gives a synopsis of a portion of the returns, from which we learn that one half of the population of England and Wales are unable to write their names. During the years 1839, 1840 and 1841, out of 735,788 persons married, 303,830 affixed their marks to the marriage registry by way of signature. In Monmouthshire and Wales 48 males in 100, and 69 females in 100 were unable to write their names, while in Cheshire and Lancashire 40 per cent of males and 65 per cent of females were similarly disqualified. At the jail in Preston Lancashire, of 1622 persons committed during the year 1844, 49 per cent, were unable to name the months of the year, 39 per cent were ignorant of the name of the reigning sovereign. Incredible as it may appear, among the opinions as to her Majesty's name, seventeen were in favor of "Prince Albert." while 13 supposed it to be "Elizabeth." Their religious ignorance was still more deplorable, 89 per cent never heard of the name of the Saviour.—*English Paper.*

Fall of Idolatry in China.

Dr. Gutzlaft records a remarkable effect of the British invasion of China. The natives expected that their idols would repel the invaders, but seeing them unable to make the least resistance, even to save themselves from the hands of an excited soldiery, veneration gave way to contempt. The idols having proved their worthlessness, the Chinese refuse to worship them, and the shrines and the priests are deserted.

True Piety.

He alone is truly religious who loves God and manifests that love in keeping His commandments—and the sum of this is, that we should love our neighbors, not so much as we love Him, but "as we love ourselves." The good man will seek to be wise in heavenly wisdom, and useful to all around him.

Writings of the Evangelists

How admirable is the simplicity of the Evangelists! They never speak injuriously of the enemies of Jesus Christ, of his executors, nor of his judges. They report the fact without a single reflection. They remark neither the Master's mildness when he was smitten, nor his constancy in his sufferings, which they thus describe—"And they crucified Jesus."

Ingenious Diffidence.

There are not among mankind so few men of genius as some are apt to imagine. Want of resolution and observance keeps from the world more works of merit than want of invention or ability.

Swedish Children.

Mr. M'Donald, in his travels through Sweden, says: "Young children, from the age of one, to that of eighteen months, are wrapped up in bandages, like cylindrical wicker baskets, which are contrived so as to keep their bodies straight, without interfering much with their growth. They are suspended from pegs in the wall, or laid in any convenient part of the room, where they exist in great silence and good humor.

Gun Cotton.

Mr. T R. Blake, of Quincy, Mass., has been in town for a few days past, with samples of the explosive cotton prepared by the house of D. Jagger & Co. Mr. Blake is quite confident that this material must almost entirely supercede the use of ordinary gunpowder, and the tests to which he has submitted it while here, certainly go far to sustain him in this opinion.

On Saturday and Monday last, he exhibited its explosive force in removing rock, in presence and to the satisfaction of a number of our citizens. The experiments were tried on the line of the Rutland Railroad, about a mile south of Burlington. We had the pleasure to witness them on Monday, and can bear testimony to the thoroughness of the work which two ounces of this curious and novel explosive agent performed, The process of charging for the blast is precisely similar to that of charging with ordinary powder. The cotton was pressed closely to the bottom of the hole, and tampered firmly. The detonation was less than we expected, and the effect of the explosion greater. The cotton did the work effectially; as Mr. Barker remarked "it did all that could be done!" The hole was drilled to the depth of 20 inches, and to that depth the rock was shattered and shivered in all directions Mr. Blake informs us that this powder will be afforded at 42 cents per pound, or about 2 1-2 cents per ounce, and that in his opinion, half an ounce would be sufficient for the blast noticed above, in which he used two ounces. If this be so, the fact of its superior efficacy and cheapness would seem to be established.—*Burlington Free Press.*

A Splendid Coach.

Messrs. Laing & Co. of Rahway, N.J., have recently finished a cariole coach for a gentleman in New Orleans, at a cost of twelve hundred dollars. The body of the carriage, which presents a perfectly plain but rich surface, is painted in Madeira drop lake, and some notion may be formed of its quality from the fact that the raw material costs $25 per pound. The inside trimmings are of French silk cotelaine, the sides covered with drab satin. Among the novelties in its construction, we noticed a spring so arranged that the opening and shutting of the door lowers or closes up the step—and thus, as the spring lock of the door is easily turned from the inside, not only may the occupant readily let himself out without the driver leaving his seat, but the step is always protected from mud and dirt. Another very convenient affair is a hollow cord passed thro' the carriage, and the other having a speaking trumpet attached, hanging in the form of a tassel. A pull at the cord attracts the driver's attention, and the lady sitting upon the back seat gives the orders for the drive.

Railway Stations a Means of diffusing a Taste for Art.

Felix Summerley, in a letter published in the *Athenæum*, earnestly advocates the decoration of railway stations with works of art.—"Decorate the principle railway stations," he says, "with paintings and statues, colored windows and mosaic pavements; and the multitudes awaiting the arrivals and departures of the trains will thus be educated in art, with the least possible parade of being so taught.—It is, however, a question whether the tasteful adornment of railway stations may not in itself be a source of profit. A station made highly attractive for its art would directly benefit the traffic. The passport to the picture-hall would be the passenger's ticket.

Gas Furnace for Organic Analysis.

This is an ingenious arrangement, by which gas burnt, mixed with air, through wire gauze, was substituted for charcoal. Its advantages are its extreme cleanliness, and the power which the operator possesses of regulating, at will, the heat,—which is not practicable in the ordinary furnace for organic analysis with charcoal.

Long Experience.

The late Dr. W—— having married a very tall lady by the name of *Experience*, being asked, some time after the event, what he thought of the married state, replied, "that he found by *long Experience*, that it was not good for a man to be alone."

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TO CORRESPONDENTS.

"J. A. of T."—The plan of driving trains of railroad cars by means of a horizontal hose in contact with the periphery of a wheel attached to one of the cars, the hose to be inflated with air in the rear of the car by a stationary engine, thus forcing the wheel forward, has been introduced in England nearly a year since. How far it has been experimented on, we are not informed. It is difficult to accommodate the *turn outs* with such central apparatus.

"T. P. of B."—Your rotary engine is very similar to several which have been tried and abandoned. The objection consist in the difficulty of making it sufficiently tight; in the chafing unavoidably produced by the vibrations if a rapid motion was permitted, and in the excessive irregular pressure on one side of the axle or its bearings. This principle of centre cam has succeeded very well in water-wheels.

"W. A. of P."—The sectional cannon recently noticed in this paper, is very different from that invented by Mr. Fitzgerald, though we are not certain that we gave the right name. We are not entitled to notice the invention of Mr. F. after he has (contrary to agreement) furnished a notice thereof to another paper for publication.

"E. B. of T."—Your invention with engraving should have appeared in this number but it is not quite ready.

"W. H. B. of R."—Your improvement in the clock movement, is original and valuable, and would be entitled to a valid patent. As the state of the clock business is at present, we could not venture to give you any advice with regard to the expediency of procuring a patent. You might satisfy yourself by consulting some of the clock manufacturers on the subject. We could furnish engravings representing both views of the movement for about $5, thereby (by publishing the same with description) establish your right of priority, while you might procure further intelligence.

"J. B. D. of S."—Your favor—description of your veneering machine with a sample of its work—is received: we are well pleased with both and shall notice it in full in our next, not having time to do it justice in this number.

"C. A. of S."—Your long, full and efficient description and drawing is received, and we shall commence its publication as soon as the requisite engravings are procured; probably next week. We have not yet fully examined the subject.

"J. P. of A."—You will receive the copy required in the course of a week.

"J. H. C. of C."—There is no doubt that your double-piston engine would work *well*, but there can be no power gained nor saved by admitting the steam between two moving pistons; while on the other hand, there would be a loss by friction, on the principle that friction is not sensibly increased by an increase of motion; and consequently the use of two pistons would double the friction of the packing. We shall give a description of your press with engraving as soon as convenient.

"C. G. C. of W."—We see no necessity of answering you by mail. There is a latch or door fastening similar to yours, already in use; an imported article,—though not so simple in its construction. The cost of a patent, including the patent fee, drawings and description would be $10.

"E. C. of P."—Your answer at length, is in type but is, we regret to say, unavoidably excluded from this number: as also that of "T. E. M." Be patient one week.

"T. L. jr. of B."—"A. F. of S."—"J. W. of G," and "A. M. B. of R."—Look for the required information in next number.

"J. S. F. of B."—"E. B. H. of B" and "T. H. D. of N," received too late for further notice in this number.

Bright Ideas.

A newly married couple took up their abode in Poplar street. At breakfast the next morning, after their entrance, the gentleman said to the lady, "My dear, this is Poplar street, and putting in *u* (you) it becomes *popular*." "And by putting us in it," promptly replied the lady, "it will become *populous*."

The Merrimac Courier says, that the building in which it is printed cost $850, and rents for $622.

A new "Ready Reckoner."

We have received from Mr. A. Hotchkiss of Maryland, N. Y., a few manuscript pages of a work which is intended for publication, and which is calculated to be generally convenient for those who are not particularly expert at ordinary arithmetical operations. It consists principally of a series of tables by reference to which, may be readily found the value of any part of a quantity on which a given rate is based. For example; if a laborer's wages is reckoned at a certain price per month, the table will show how much per day, or any number of days: if the price of an article is given per cwt., the table will show how much per lb., or for any number of lbs., &c., extending to a great variety of branches of weights, measures, &c. If the work is got up in a small, compact form, we believe it will be found a convenient manual, and come into extensive use.

Powder Mill Explosion.

The powder mill of Mr. Whipple of Lowell Mass., was blown up for the sixth time, on Tuesday week. By the explosion of one of the mills, some burning fragments were thrown on the roof of the other, which might have been readily quenched, but as it was not deemed safe to approach the building, it was suffered to burn, and exploded about half an hour afterward.

Another New Village.

A new depot has been established on the Boston and Worcester railroad, one mile west of the village of West Newton, and within ten miles of Boston, where several enterprizing citizens are preparing to commence building. The site is near the Charles River, and is a truly rural, and beautifully situated place, and must soon become populous. The fare to Boston is only 16 cents.

ADVERTISEMENTS.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the following rates:

One square, of eight lines one insertion,	$ 0 50
" " " " two do.,	75
" " " " three do.,	1 00
" " " " one month,	1 25
" " " " three do.,	3 75
" " " " six do.,	7 50
" " " " twelve do.,	15 00

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" " -	Wm. Taylor & Co.
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CITY CARRIERS.

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Persons residing in the city or Brooklyn, can have the paper left at their residences regularly, by sending their address to the office, 128 Fulton st., 2d floor.

BOOKS! BOOKS!!

☞ We would inform those who are desirous of procuring **MECHANICAL AND SCIENTIFIC BOOKS,** that we have made arrangements whereby we can furnish almost any work, at the lowest prices. We have Scribner's Mechanic, and Scholfield's Geometry, constantly on hand.

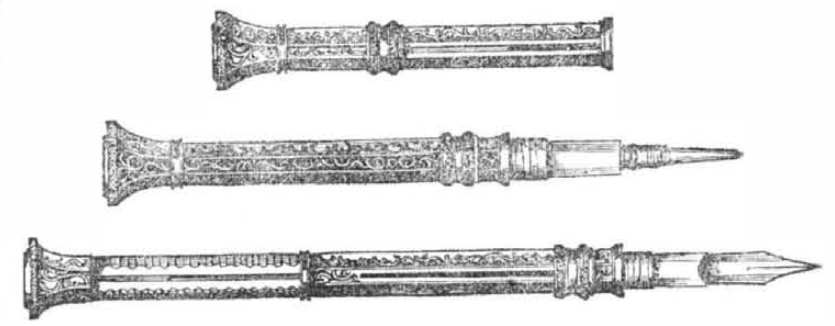
Price of Scribner's Mechanic, tuck & gilt edge $1,50
" " plain, bound in leather, $1,12
" of Scholfield's Geometry (per vol.) $1,50

☞ The trade furnished at a discount.

MUNN & CO., Publishers,
F6 128 Fulton street, N. Y., 2d floor.

Engraving on Wood

Neatly and promptly executed at the Office of the Scientific American, 128 Fulton st, three doors from the Sun Office. Designs DRAWINGS of all kinds for PATENTS, &c., also made, as above, at very low charges.



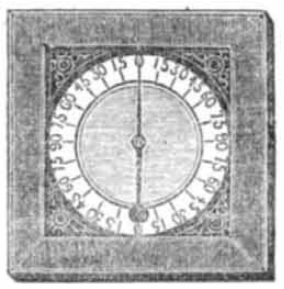
Bagley's Patent Extension Penholder and Pencil.

This is the most compact, complete, convenient and useful pocket companion ever offered to the public. The multiplicity of its usefulness and the smallness o its size, renders it a perfect Multum in parvo.

In the short space of 2 3-4 inches is contained a Pen, Pencil, and a reserve of leads, and by one motion slides either the pen or the pencil out and extends the holder to six inches, which is but little more than half the length, when shut up, of the common pen holder, but when extended is one fourth longer. This article is secured by two patents, and the Manufacturers are now ready to receive orders for them in any quantity, either of Gold or Silver, together with his celebrated ever pointed Gold Pens, which need no proof of their superiority except the increased demand for the last six years, and the numerous attempts at imitation.

A. G. BAGLEY, No. 189 Broadway.
New York, Sept. 1, 1846. o24 tf

Plumb and Level Indicator.



The utility of this invention so far exceeds the expectation of the inventor that he has been induced to engage in the manufacture of them to a large extent. It is understood from the engraving, that the proper position of the instrument is vertical, and that the weight of the ball will keep the index in a perpendicular position, so that either the bottom or side of the frame being placed against a horizontal, vertical or oblique surface, the index will show its inclination, (if there be any) in degrees.

Besides its utility, the Indicator possesses a share of elegance, consisting of a neat mahogany frame 9 inches square and glass, encasing a lithographic dial with an appropriate picture in the centre, and the movement is so free that a variation of one fourth of a degree is indicated. They may be sent to any part of the U. S. by Express.

For sale, wholesale and retail, at this office. Address MUNN & CO (post paid) ☞ Price $1 single. A discount to dealers. m13 tf

Dr. S. B. SMITH'S Torpedo Magnetic Machine.

The CURES PERFORMED BY THIS NEW and singular machine, which obtained the premium and medal at the Fair of the American Institute, are multiplying rapidly throughout the United States. A few among the many cures are hereunto annexed:

State of New York, City of New York, SS.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

Affirmed before me, this 16th day of Feb. 1847.
DAVID S. JACKSON,
Acting Mayor of the City of New York.

Cured of the Dropsy, Jaundice, and Contraction of the Leg: Sarah Sanger, 154 Delancey st., N. Y.

Cured of Lock Jaw: A case under the care of A D. Bacon, M. D., Annisquam, Mass.

Case of Scrofula and Palpitation of the Heart: Two of Dr. Smith's own children, the scars still to be seen.

Cured of Spinal Complaint and Weak Eyes; Cases attested to by H. Peck, New London, Huron County, Ohio.

Cured of Rheumatism: Several cases attested to by J. Miller, of New London, Ohio.

For further particulars relative to the wonderful cures performed by these wonderful machines, we would refer you to the inventor, who has original letters from those cured, that he would be pleased to show at his office.

Price $12, neatly put up in mahogany cases, with a book of explanation to accompany.

Orders from any part of the United States, promptly attended to. Address
F27 tf MUNN & CO. (post paid) New York.

Foster's Window Shades.

The NEW (intended) PATENT FRICTION WINDOW SPRING, recently invented by G P. Foster of Taunton, Mass. is now ready and for sale as below. It consists of a spring attached to the sash made to bear upon the inside of the window frame, and thereby holds the sash in any position with equal strength of a cord and weight.

These convenient springs have been tested and are known to supersede every other spring yet invented, for convenience, while, for durability, they will last much longer than any kind now in use.

They may be seen at the hardware store of W. N. Seymour & Co. No. 4 Chatham Square, and may be had upon application to James Lancaster, Agent for this city, at the same place, who will give full instructions in adjusting them. m6 4t*

Lap-welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

These Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
28 Platt street, New York.

Bentley's Patent Tubular Steam Boilers.—These boilers offer the following advantages, viz. Cheapness, small consumption of fuel, require but little room, and are set up without masonry or brick work, and are peculiarly adapted for Hatters, Dyers, Bath Houses, &c. &c.

For sale by SAMUEL C. HILLS,
j2 3m* Patent Agent, 12 Platt st.

NOTICE.
TO COTTON & WOOLEN MANUFACTURERS.

The subscriber will furnish to order his Improved Cotton Willow and Wool Picker. It is warranted to do more work and much better in quality, with less outlay of power than any other machine in use, also the repairs required are much less on the machine itself and the succeeding machinery, the cotton or wool being so perfectly opened there is much less strain upon the card, clothing, &c., &c. It has been introduced into more than 60 of the best Mills in New England and quite a number of them have stated to me that they save the expense of the machine in a few months in WASTE ALONE, when much stock is used. EDMUND BACON,
Superintendant of Portsmouth, N. H.
d12 6m* Steam Mills.

GENERAL PATENT AGENCY.

The subscriber has established an agency at his warehouse, 12 Platt street, New York, for the protection and general advancement of the rights and interests of Inventors and Patentees.

The objects of this agency are more particulary to aid and assist Inventors and Patentees in effecting sales of their inventions and of goods and wares made therewith—and also for the sale and transfer of Patent Rights.

Arrangements have been made with a lawyer familiar with the Patent Laws, who will attend to the legal branch of the business upon reasonable terms. Satisfactory references will be given. Applications may be made to the undersigned personally, or by letter, post paid. SAMUEL C. HILLS,
j2 3m* General Patent Agent.

Branwhite's Patent Color Discriminator.

☞ This ingenious invention consists of a neat box in which are arranged in a scientific manner, all the most brilliant colors, THIRTY FIVE IN NUMBER, represented by as many convex discs of the FINEST SILK. Each disc bears a number referring to an explanatory scale. The attention of storekeepers, milliners, and indeed all who have occasion to vend or purchase colored articles of any kind, is respectfully invited to this new and valuable discovery. More trouble can be saved by its use in ONE DAY than four times the amount of its cost. For sale, wholesale and retail, at the office of the Scientific American, 128 Fulton st., 3 doors from the Sun Office.

They may be sent by Express, to any part of the United States. oct31

PATENT AGENCY AT WASHINGTON.
ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring Patents.

Will prepare the necessary Drawings and Papers for applicants for Patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the Patent Laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, promptly communicated. All letters on business must be post paid, and contain a suitable fee, where a written opinion is required.

Office on F street opposite Patent Office.

He has the honor of referring, by permission, to—Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

Black Lead Pots.—The subscriber offers for sale in lots to suit purchasers, a superior article of BLACK LEAD POTS, that can be used without annealing. The price is low, and founders are requested to make a trial.

SAMUEL C. HILLS,
j2 3m Patent Agent, 12 Platt street.

TO PATENTEES AND MANUFACTURERS.

The undersigned, Forwarding and Commission Merchants, located at Harrisburg, the seat of Government of Pennsylvania, solicit consignments of Groceries, Merchandise, Domestic Manufactures, and useful Patent articles.

They are in the midst of Flouring Mills, Forges, Furnaces, Coal Mines, Canals, Rail Roads, and one of the best agricultural districts in the Union.

☞ One of the undersigned is a machinist of many years experience, and will give personal attention to patent machinery.

Letters post paid will receive immediate attention.
FUNK & MILLER
Harrisburg, Pa., Feb. 14. F20 13t*

Steele & St. John,
FASHIONABLE MERCHANT TAILORS.
No. 27 John Street.
d19 3m NEW YORK.

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CURIOUS ARTS

Manufacture of Steel Pens.

Although millions of metallic pens are consumed in Europe and other parts of the world yet the manufacture of them is little understood, and carried on extensively only in England and the United States.

The principle of this manufacture is extremely simple, nevertheless, the operations necessary to bring this small article to the state in which we see it, are more complicated than we should be led to expect. The following is the information on the subject which we have been able to collect :

The material of which metallic steel pens is made, consists, in general, of plates of steel, of the same thickness of the pen when finished. These steel plates are from 1.25 metres to 1.50 metres long, by 0.60 to 0.90 metre wide—(the metre is equal to 39.371 English inches.) They are cut by a machine entirely similar to that used for cutting the pasteboards for Jacquard looms, into bands or strips, the width of which is about double the length that each pen should have when finished.

These strips are taken to the cutting press, which nearly resembles the fly press used in coining, but is smaller and more simple. A young girl takes, with the left hand, one of the loaded levers of this press, and with the right hand pushes successively the metallic strips on to the die or matrix of the press.

When this operation is completed, the work woman strikes a blow with the press, which cuts out many blank pens at a time; these are so placed in two rows, that the point of one of the pens of the one row is cut out of the interval that separates two adjoining pens of the other row, and so reciprocally. The die which lies below, and the counter die, which the screw of the press successively raises and lowers, have forms corresponding to the number and pattern of the pens that are to be cut at one blow. As soon as the blow is struck, the workwoman drives back the lever, the cut-out blank pens fall into a box placed to receive them ; the work-woman pushes on the strip of steel, and the same operation is repeated. A young girl can in this manner cut out 300 blank pens in a minute.

The pens in this state are taken to another workwoman, whose business is to pierce the hole which they are to have near their centre. This hole is made by a press exactly like that used to cut the pens, but smaller. The piercer or punch, has the shape of the hole intended to be made, and the matrix has a corresponding cavity.

The blank pens just cut out, being placed to the left of this workwoman, she takes a certain number of them in her right hand, which she holds by the fingers by the widest part, opposite to the point : she introduces this point between the dies, until she meets with a resistance caused by a stopper, she then adjusts it, fixes the pen in its places, by means of a small elevation on the counter-die, so arranged, as that not only the point, but also its oblique edge, exactly fit it, and the pen is placed in a fixed and determined position under the screw of the press. In this position, the workwoman strikes the blow with the fly press, pierces the hole, and whilst, with the same hand, she draws back the lever, with the right she throws to the same side the pierced pen, which had been held firmly during the operation, and immediately, with quickness and dexterity, replaces it with another, which is to be similarly treated. These pens thus pierced, pass into the hands of a third workwoman, who makes two lateral slits, which gives them the necessary elasticity. This operation is performed exactly in the same manner as the preceding.

Among all the before mentioned operations, none presents more difficulties than the cutting or sinking of the dies and counter-dies, and their adjustment in the press. These require, in fact, much ability, care and exactness ; but when once good tools are prepared the manufacture may go on steadily, furnishing products of a good quality, and always of the same pattern.

(To be concluded.)

THE SPEAKING MACHINE, OR EUPHONIA.

The above engraving is a representation of Professor Faber's celebrated *Speaking Machine*, which is now attracting so much attention in England. It is the result of twenty five years labor. The London Illustrated News speaking of it, says : " We were present on Monday, at a private view of one of the most extraordinary pieces of mechanism ever exhibited ; the powers of which are equal to all we have heard of the famous Automaton Chess Player, without the slightest suspicion of collusion of any kind. We allude to the Speaking Automaton, which has just arrived in England. The Automaton is a figure like a Turk, the size of life, reclining against some pillows. Every portion of the machine is, however, thrown open to the inspection of the company, and its frame work is moved about the room. Connected with it is a series of keys, or rather pedals ; and by pressing these down, in various combinations, the articulate sounds are produced. As Mr. Faber, the director, is a German, of course the machine converses more fluently in that language than our own ; but it is equally capable of speaking French, English, Latin, Greek, and even whispering, laughing and *singing*. All this depends upon the agility of the operator in manipulating the keys. The breath is felt coming from the lips, and, by compressing the nostrils, it speaks with a nasal accent immediately. We tried it with the following words, which were produced by Mr. Faber as fast as we suggested them : " Philadelphia," " tres bien," " thwart," and " God bless the Queen," which last sentence it concluded with a hurrah, and then laughed loudly. The chief organs of articulation are framed of India rubber, and a pair of bellows are substituted for the lungs. We learned that the inventor was seven years in getting the figure to pronounce the vowel E correctly. We repeat that the exhibition is most wonderful."

The Farmer's Weather-ometer.

(Concluded from No. 24.)

A very simple hygrometer may be formed by means of a flaxen line or large well manufactured whip cord, five feet long—having a graduated scale fixed to an index, moving on a fulcrum. The length of the index, from the fulcrum to the middle of the eye, to which the cord is fixed, two and a half. The air becoming moist the cord imbibes its moisture—the line, in consequence is shortened, and the index rises. On the contrary, the air becoming dry, the cord discharges its moisture—lengthens, and the index falls.

That the farmer may be benefitted by this instrument, will be seen by the following extract from the " Minutes of an English agriculturist :

" Yesterday morning, while the hygrometer stood at two degrees moist, the peas were by no means fit for carrying : the haulm was green, and the peas were soft. About 10 o'clock the hygrometer fell to one degree dry—before one the peas were in good order—I went up into the field merely on the word of the hygrometer, and found them fit to be carried."

But the only method by which the changes of weather can be traced with precision, is, to keep regular registers of the weather, and to watch every appearance in the heavens or on the earth which may tend to point out the approaching seasons. This point cannot be urged too strongly on the attention of the intelligent agriculturists ; for, as the pursuits of the farmer necessarily require him to be much in the open air, this office would become both regular and easy to him ; and his progress in fixing facts, and in drawing judicious conclusions from them, would probably be more speedy and successful than he might otherwise expect, and would enable him, profitably, to regulate the management of his crops.

This important object might in all probability be more effectually obtained,, if, together with the usual registers of the weather, obstructions were made on the winds in many parts of the earth. For this purpose the three following instruments have been suggested; they may be constructed at no great expense, and thus some useful information might be acquired.

1st. To mark the hour when the wind changes from North-east to South-west, and the contrary. This might be managed by making a communication from the vane of a weathercock to a clock, in such manner, that if the vane should revolve quite round, a tooth of the revolving axis should stop the clock, or put back a small bolt on the edge of a wheel revolving once in twenty four hours.

2d. To discover whether in a year more air is passed from north to south, or the contrary. This might be effected by placing a windmill sail of copper, about nine inches diameter, in a hollow cylinder, about six inches long, open at both ends, and fixed on an eminent situation, exactly north and south. Thence only a part of the north-east and south-west currents would affect the sail so as to turn it ; and if its revolutions were counted by an adapted machinery, as the sail would turn one way with the north currents of the air, and the contrary one with the south currents, the advance of the counting finger either way would show which wind had prevailed most at the end of the year.

3d. To discover the rolling cylinder, of air, the vane of a weathercock might be so suspended as to dip or rise vertically, as well as to have its horizontal rotation.

Hydrostatic Balance.

Provide a pair of scales, in one of which place a tumbler filled with water, and poise it by placing weights in the opposite scale; then hold in the tumbler a block of wood, or any substance nearly the size of the tumbler, but so that it shall not touch the sides or bottom; when, although nearly the whole of the water will have to run over the sides, and only a spoonful may remain, the scales will continue balanced; and all this without regard to the weight of the body you may plunge into the water, taking care to hold it entirely clear of the tumbler, so that it touch it nowhere; for the effect will be the same if what you plunge in be scooped hollow and made water-tight. A bladder blown up, tied fast, and held down in the water, so as to leave only a spoonful of water surrounding it, will keep the scales balanced just as well as a block of lead of the same size.

Transplanting Evergreens.

There is no more difficulty in transplanting evergreens than other trees that are not evergreen. A clump of earth must always be taken up with the roots, and when you do this, you may set them in June. The whole family of pines have tender roots, and when you attempt to take a tree up without earth, the tender bark peels off and leaves the roots skinned. You need not take up long roots. Some have pulled up white pines with roots ten feet long, and have endeavored to make them grow by watering &c. But you never need a root more than one foot long for a tree that is six feet high. You will as easily remove a pine with such roots, and a clump of earth, as you will an apple tree with its roots three or four feet long. The only trouble arises when trees are to be carried to a distance.

Vegetable Colors.

The fresh blossoms and succulent stems of buckwheat have been applied in Europe to the purposes of dyeing wool, &c. The infusion, by the addition of preparations of bismuth and tin, produces a beautiful brown color. From the dried flower bundles, different shades of green are obtained. The Siberian species of wheat, in particular, yields a fine yellow, which, upon boiling the wool still longer in the dye, changes into a golden tint, and at length becomes a beautiful yellow.

THE NEW YORK
SCIENTIFIC AMERICAN:
Published Weekly at 128 Fulton Street., (Sun Building,) New York.

BY MUNN & COMPANY.

The SCIENTIFIC AMERICAN is the Advocate of Industry and Journal of Mechanical and other Improvements: as such its contents are probably more varied and interesting, than those of any other weekly newspaper in the United States, and certainly more useful. It contains as much interesting Intelligence as six ordinary daily papers, while for *real benefit*, it is unequalled by any thing yet published Each number regularly contains from THREE to SIX ORIGINAL ENGRAVINGS, illustrated by NEW INVENTIONS, American and Foreign,—SCIENTIFIC PRINCIPLES and CURIOSITIES,—Notices of the progress of Mechanical and other Scientific Improvements, Scientific Essays on the principles of the Sciences of MECHANICS, CHEMISTRY and ARCHITECTURE,—Catalogues of American Patents,—INSTRUCTION in various ARTS and TRADES, *with engravings*,—Curious Philosophical Experiments,—the latest RAIL ROAD INTELLIGENCE in EUROPE and AMERICA,—Valuable information on the Art of GARDENING, &c. &c.

This paper is especially entitled to the patronage of MECHANICS and MANUFACTURERS, being devoted to the interests of those classes. It is particularly useful to FARMERS, as it will not only apprise them of IMPROVEMENTS in AGRICULTURAL IMPLEMENTS, but INSTRUCT them in various MECHANICAL TRADES, and guard against impositions. As a FAMILY NEWSPAPER, it will convey more USEFUL Intelligence to children and young people, than five times its cost in school instruction.

Being published in QUARTO FORM, it is conveniently adapted to PRESERVATION and BINDING.

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